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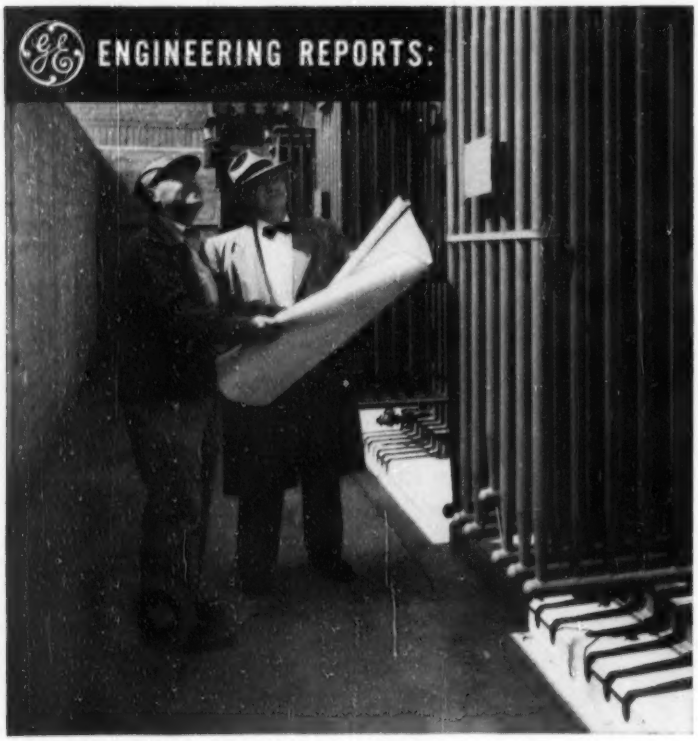


PROJECT CO-ORDINATION of electrical equipment for new pumping stations was handled by D. H. Bixby (right) of G.E.'s Louisville office, working with J. C. Jones, field supt., Central Contracting Co., and Marine Electric Co.

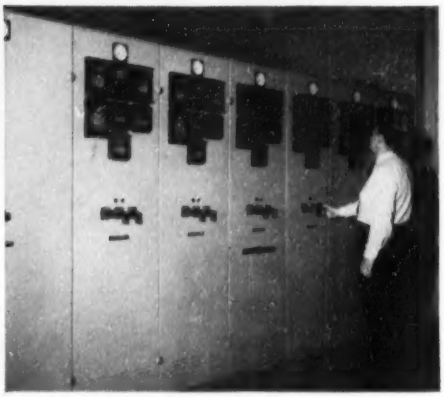
G-E engineering service helps speed Louisville flood control

Expedites construction of 4 pumping stations by prompt delivery of all G-E equipment

In the $24,475,000 Louisville flood control project of the U.S. Army Corps of Engineers, General Electric project co-ordination service, in addition to application engineering, played an important part Through this service, all G-E power distribution equipment ordered for four of the project's pumping stations was delivered either on or ahead of schedule. This helped the electrical contractors, Marine Electric Co., and the general contractors, Central Contracting Co., to work at top efficiency, expedited construction, and earned the praise of both the Army engineers and contractors.

G-E equipment, backed by G-E engineering services, can pay off on *your* heavy construction projects. Learn how by contacting your nearest G-E Apparatus Sales Office. General Electric Company, Schenectady 5, New York. 664-32

ENGINEERING ASSISTANCE on the project was made available to U.S. Army engineers through F. G. Perkins (center), G-E sales engineer.



COMPLETE CONTROL of Shawnee station is provided by G-E 2400-v metal-clad switchgear consisting of 6 circuit breaker feeder sections.

INCREASED PROTECTION at the project's 34th St. pumping station is provided by 480-v G-E switchgear with 6 drawout air circuit breakers.

Engineered Electrical Systems for Heavy Construction

GENERAL ELECTRIC

Two New Medical Buildings Have Frameworks of Bethlehem Steel

LANKENAU HOSPITAL, PHILADELPHIA

The new 320-bed Lankenau Hospital in Philadelphia is representative of the most advanced thinking in modern hospital construction and facilities. Six stories high with a facing of red brick, the hospital, built in the shape of an H, stands on a 94-acre site.

Patient's beds are in one wing, out-patient and clinic facilities in the other, and the center connecting wing provides technical facilities and services common to both. An unusual feature is an elaborate health museum with animated displays, open to the public.

The main hospital building contains 1750 tons of Bethlehem structural steel. Architect: Vincent G. Kling; Dr. L. P. Wilson, consultant; General Contractors: Wark & Co.; Steel Fabricators: Belmont Iron Works —all of Philadelphia.

MEDICAL SCIENCE BUILDING, NEW YORK CITY

This six-story addition to the New York University-Bellevue Medical Center houses classrooms, laboratories and administration offices. Facilities include a 120,000 volume library, the College of Medicine and the Post-Graduate Medical School. The interior of the structure is designed so that rooms, including laboratories, may be changed in size by removing interior partitions as needs arise.

The T-shaped building has an exterior finish of light-gray ceramic glazed brick over 1900 tons of Bethlehem Structural Shapes. Architects: Skidmore, Owings and Merrill; Structural Engineers: Seelye, Stevenson, Value and Knecht; General Contractors: John Lowry, Inc., all of New York City. Steel Fabricators: Dreier Structural Steel Co., Long Island City.

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Robert F. Boger
Publisher

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POTTER-DeWITT CORP. beats WINTER shutdown on New York Thruway

with rubber-tired fleet

A flick of a fingertip switch and load clears quickly, easily. 18-ton capacity body can be electrically heated to prevent load from sticking in freezing weather.

To help speed construction of their 3 sections of the New York Thruway, Potter-DeWitt Corporation, Pavilion, New York, used a fleet of 6 C Tournapulls, 2 LeTourneau-Westinghouse Rear-Dumps, and a rubber-tired Tournatractor.

Tournatractor handled push-loading and scattered dozing tasks. Tournapulls moved a large share of the scraper dirt. Where rock or other excavator work was involved, Potter-DeWitt interchanged Tournapull Scrapers with 18-ton Rear-Dumps . . . got double-duty from same prime-movers.

Rear-Dumps haul at 20 mph

On the section illustrated above — building shoulders along the Weedsport Interchange west of Syracuse — the two Rear-Dumps worked with a 1¼-yard dragline. Despite snow and very cold weather, each unit made a 2-mile cycle every 13¾ minutes. Haul speeds reached 20 mph, averaged 14 mph.

Job Superintendent C. P. Cudebec reports that ability to maneuver and turn around non-stop on narrow 2-lane highways was a big factor in choosing these LeTourneau-Westinghouse haulers. Their normal turn radius is 13'8" . . . in dump position, with bowl raised, turn radius is only 10'6".

"These units are the best, and I've run everything," says Operator Ray Benedict. "They're easy to maneuver and get around in."

Get a demonstration on your job. Find out for yourself how rubber tires and electric controls can give you lowest-net-cost-per-yard.

Tournapulls work on slopes where other scrapers can't

After completing their work on the Thruway, 2 of Potter-DeWitt's 6 C Tournapulls widened and relocated Highway 31 between Port Byron and Montezuma, N.Y. With 188,000 yards of red clay to move, the 2 "C's" together accounted for 260 pay yards per 50-minute hour. With pusher, loads of 10 pay yards took less than 1 minute. Despite continuous 8% adverse grade in fill, 6% adverse in borrow, each completed a 1500' cycle every 3.3 to 4.1 minutes.

Says Job Superintendent Cudebec, "Spreading topsoil and opening borrow, Tournapulls go on slopes that stop other rubber-tired scrapers."

"Tournapulls are first rate," adds Grade Foreman DeWayne Black. "They handle nice and are easy to work with."

25 miles per day to handle scattered assignments

Owners report the mobile Tournatractor handled such a wide variety of tasks on the Thruway there was just no comparison between it and crawlers. On this section of the Thruway, the 186 hp Tournatractor dozed fill, push-loaded Scrapers, handled shovel clean-up, and graded shoulders. In a typical day, it frequently traveled 25 miles around the job. It went anywhere, handled jobs scattered beyond the economical limits of a crawler. After 4500 hours, mechanical efficiency had averaged 90%.

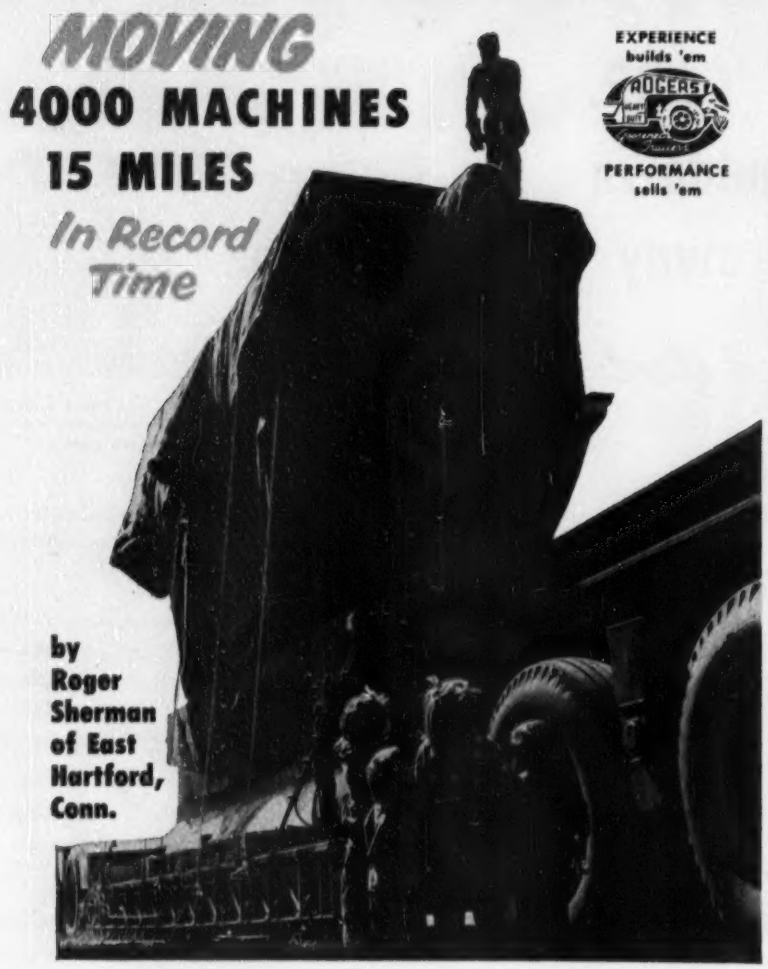
Says Superintendent Cudebec, "Tournatractor is very maneuverable. We have used it in 5 different places during a day and never had to use a trailer to haul it around. We never needed planking to work on a slab."

Tournapull—Trademark Reg. U.S. Pat. Off.
Tournatractor—Trademark RPT-600-H-b

LeTourneau-Westinghouse Company

PEORIA, ILLINOIS

A Subsidiary of Westinghouse Air Brake Company



Give the expert heavy mover the proper
tools and he'll do wonders as in this case.
The mover was Roger Sherman of East Hartford,
Conn. The tools were Rogers Low Bed Trailers.
Records were established in moving 4000 machines 15 miles
to the new plant of United Aircrafts Hamilton Standard Division.
For example, it was originally estimated that
20 days would be required to dismantle and move a 45 foot plating
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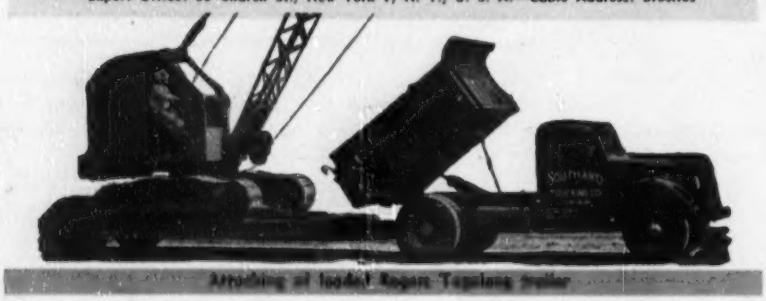

READER COMMENT

Senator Long on housing profits

SIR: I have noted the article in the May 20 issue of Engineering News-Record, (p. 161-164) concerning the profits made by builders under Section 608 of the National Housing Act.

In this article you quote from hearings on this subject which I conducted in 1949. These excerpts and the introductory material contained in the article appear to give the erroneous impression that I considered excessive profits to be justified.

The hearings from which you have selected these excerpts were requested and held by me for the purpose of attempting to prove that builders were able to make quite unjustified profits under this section. If you will refer to these hearings in their entirety you will note that I made repeated efforts to require the responsible officials to admit the existence of the excessive profits which have now come to light. However, even the leading questions which I used in this effort, and which you have selected for quotation, failed to obtain a clear admission of the now well-demonstrated facts of the situation.

My position on this matter is best understood by reference to the measures I proposed myself to prevent builders from making undue profits. Immediately after the hearings I offered an amendment to the Housing Amendments Act of 1949, which was adopted by the Senate Banking and Currency Committee, reducing the maximum federal guarantees from 90% to 80%. This action, in fact, was the direct result of the hearings from which you have quoted, despite the denial by responsible officials that these excessive profits were possible.

The following year, in reporting out the Housing Act of 1950, the report of the committee, which I signed, characterized the Section 608 program as the "apartment boom floated on public risk and private profit."

Although Section 608 was discontinued after the 1950 Act, I was one of the co-authors of an amendment to the Defense Housing and Community Facilities Act of 1951, which was adopted by the Senate, which prevented the repetition of these abuses in connection with the projects under that Act. (See Congressional Record for April 9, 1951, at pages 3489-3491). This amendment required the mortgagor to certify the

(*Continued on page 8*)

B.F.Goodrich

Tires work at lower cost per mile, construction company reports

PAYLOADS UP TO 25 TONS are carried by B. F. Goodrich Universals on this Kansas City bridge approach job. Wedge-shaped cleats defy sideslipping, give traction in reverse as well as forward.

THE Clarkson Construction Company scraper above is at work on the south approach to a new bridge over the Missouri River. The bridge will connect Kansas City with North Kansas City, is typical of the heavy construction work done by this firm's 100 units in the states surrounding Missouri.

Clarkson uses B. F. Goodrich tires for this rugged service, prefers them because they cut costs per mile. The specially-compounded tread resists rock cuts and snags, protects against costly tire failures that tie up work schedules.

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Under the tread is the money-saving B. F. Goodrich nylon shock shield. Layers of strong, elastic nylon cords stretch together under impact to protect the tire body from smashing shocks and bruises. B. F. Goodrich tires give you this 4-way saving: (1) more original hours of service (2) more recappable tires and more hours of service per recap (3) increased bruise resistance (4) less danger of tread separation. All these advantages, yet you pay nothing extra for the exclusive BFG nylon shock shield.

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- Engine, transmission, clutches, axle assembly, and torque converter are grouped compactly and are easy to get at. You save maintenance, time and labor. For example, it takes *less than an hour* to replace the spring-loaded clutch.
- Patented "bucket-rocking action" helps you get a full bucket load within seconds, without tire-spin or undue strain on the loader.
- Torque converter assures smooth flow of power to all four wheels — gives you sure-footed traction, reduces engine strain and tire wear.

It's design details like these that help Le Roi-Transo TLF-150 save important time and money for you.

Have your Le Roi-Transo distributor arrange a demonstration, so you can see *all* the reasons why it pays to use a Le Roi-Transo TLF-150 on your material-handling jobs. TD-18

Note how compact arrangement of transmission, clutches, and torque converter puts transfer case conveniently at rear, so by merely removing the rear grill you can replace transmission clutch in less than 60 min.
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GE picks waterproof, fireproof FOAMGLAS to insulate Atomic Sphere

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General Electric Company engineers picked waterproof, fireproof FOAMGLAS to insulate the world's largest steel sphere. The Knolls Atomic Power Laboratory, Schenectady, which G.E. operates for the A.E.C., will use the sphere to test the prototype of an atomic powered submarine for the U.S. Navy. *Constant* control of temperatures is a must for worker comfort. Therefore, to insulate the sphere FOAMGLAS was a must because its sealed glass cells can't absorb the moisture that cuts efficiency of other insulations. This guarantees GE *constant*, *long-lasting* insulating protection . . . and fireproof FOAMGLAS reduces external fire hazards which might damage the sphere.

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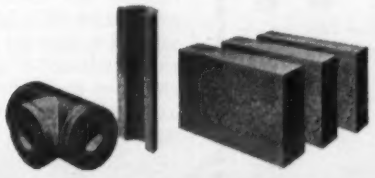

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actual cost after the completion of the work and to return any amount borrowed but not spent on a project.

In view of the very misleading impression given by your article of May 20, it would be appreciated if you would publish this letter in an early issue, in order that the record may be set straight.

RUSSELL LONG
United States Senate
Washington, D. C.

Long welded girders abroad

SIR: In ENR April 1, 1954, p. 32, we read about the new span record set for welded girders. This record may be one in the U. S., but we wish to point out that the "Ponts et Chaussees de la Seine-Inferieure" in 1948-1951 ordered and supervised the construction of the Oissel bridge over the Seine River.

This structure has four spans and is made up of four main continuous welded plate-girders. The spans are respectively 170'-6", 217'-6", 217'-5", 216'-7", long. A detailed description of the structure is included in an article published in October 1952 in "La Technique Moderne-Construction." The structural steel was fabricated and erected by our company.

And may we remind your readers that our company has been joint venturer in the fabrication of the structural steelwork of the all-welded cantilever "Corneille" bridge at Bouen, described in ENR March 12, 1953, p .42.

N. CHAMPSAUR
Enterprises Metropolitaines et Coloniales
Paris

Bidding by engineers

Sir: I have read with increasing interest and increasing annoyance the debate now in progress in your columns on bidding for engineering services. Particularly, I have been shocked to read the letter by Harold Broock (ENR June 3, p. 8) in which he favors such bidding.

What seems to have completely escaped Mr. Broock and the other proponents of bidding for engineering services is that the quality of the services rendered is a function of the ability of the individual engineer and cannot be measured in terms of dollars and cents. This is well demonstrated by the following example. In the case of a factory building, let us suppose that there are two ways of handling the problem:

1. By means of a conventional approach in which all sections may be obtained after three minutes work from the nearest handbook,

and

2. A detailed analysis involving two or three weeks of calculation.

If an engineer has to bid low in order to get a job, then he cannot afford to allocate design expenses toward research into design economics and still run the job at a profit. Therefore, he will be strongly tempted to adopt Scheme 1.

In doing this he runs no risk of being criticized since the job produced will be quite conventional. However, the client will not have had as inexpensive a job as he might have obtained at the expense of slightly increased engineering charges.

Commenting particularly on Mr. Broock's letter, he states that some engineers can attack a design and produce a solution much faster than others. To me this is no criterion for selection. It appears to be much better to make sure that the engineer can come up with the right solution rather than to be concerned with the speed with which he comes up with any solution.

Pursue the course of bidding for engineering services and we will prostitute the profession and favor handbook engineering. It seems to be difficult to make people understand that engineering services are not the commodity that one buys. What one buys is the finished structure.

A. M. LOUNT, JR.
T. O. Lazarides, Lount and Partners, Toronto, Ont.

CALENDAR

Conference on new developments in engineering design, Virginia Polytechnic Institute, Blacksburg, Va., Aug. 4-6.

National Council of State Boards of Engineering Examiners, annual meeting, Hotel Saint Paul, St. Paul, Minn., Aug. 26-28.

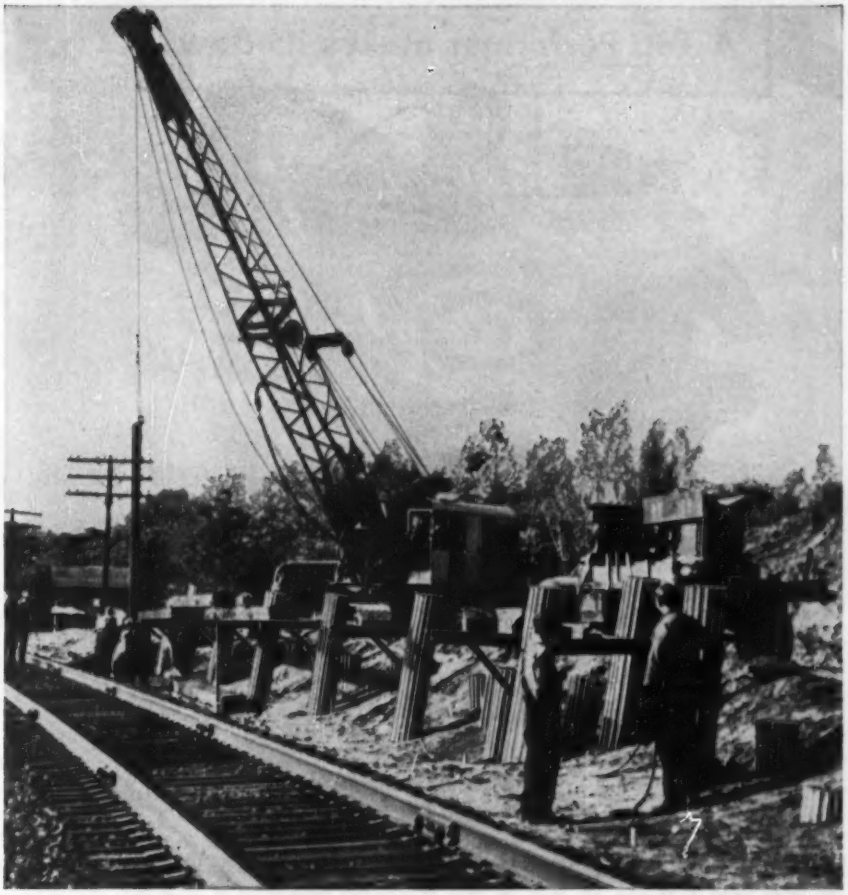
American Water Works Assn., fall meeting, Montauk Manor, Montauk, N. Y., Sept. 9-10.

New England Water Works Assn., Dixville Notch, N. H., Sept. 13-15.

National Highway Conference of County Engineers and Officials, ARBA, Deshler-Hilton Hotel, Columbus, Ohio, Sept. 13-15.

Society for Experimental Stress Analysis and International Congress and Exposition: Bellevue-Stratford Hotel Philadelphia, Pa., Sept. 21-23.

Here Monotubes are being driven to support a railroad overpass.



Will fewer piles meet your load requirements?

. . . check these MONOTUBE features!

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Monotube piles have exceptional bearing capacity. There's plenty of data and proof on their excellence in transmitting loads to the penetrated soil. This, plus visual top-to-bottom assurance of their condition after driving, permits designing for heavy loads.

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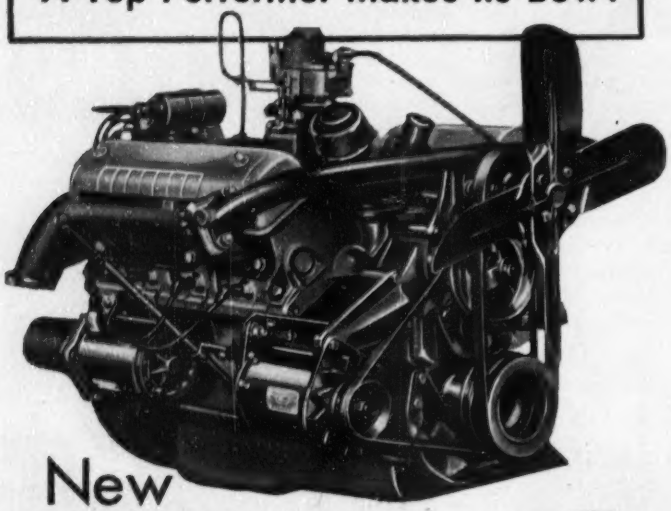
For additional, specific data, write to The Union Metal Manufacturing Co., Canton 5, Ohio.

Monotube *Foundation Piles*

UNION METAL

A Top Performer makes its Bow!



New

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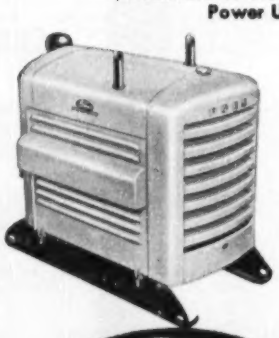

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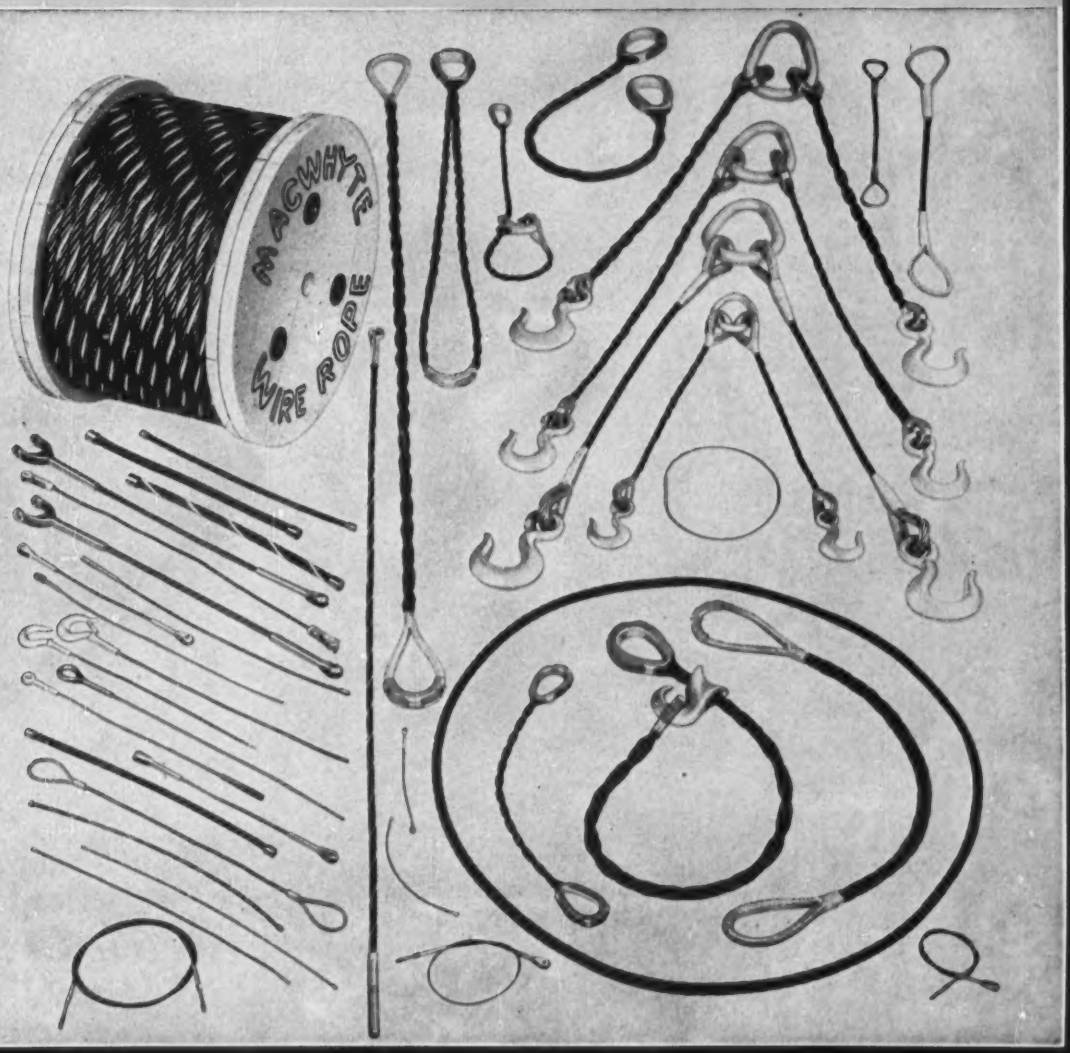

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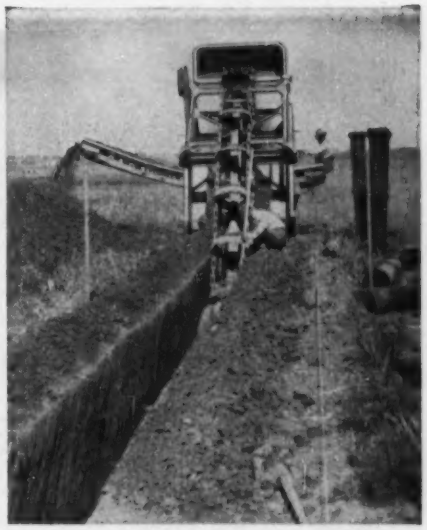

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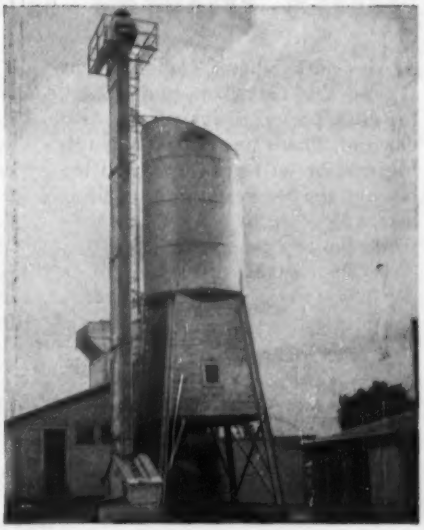

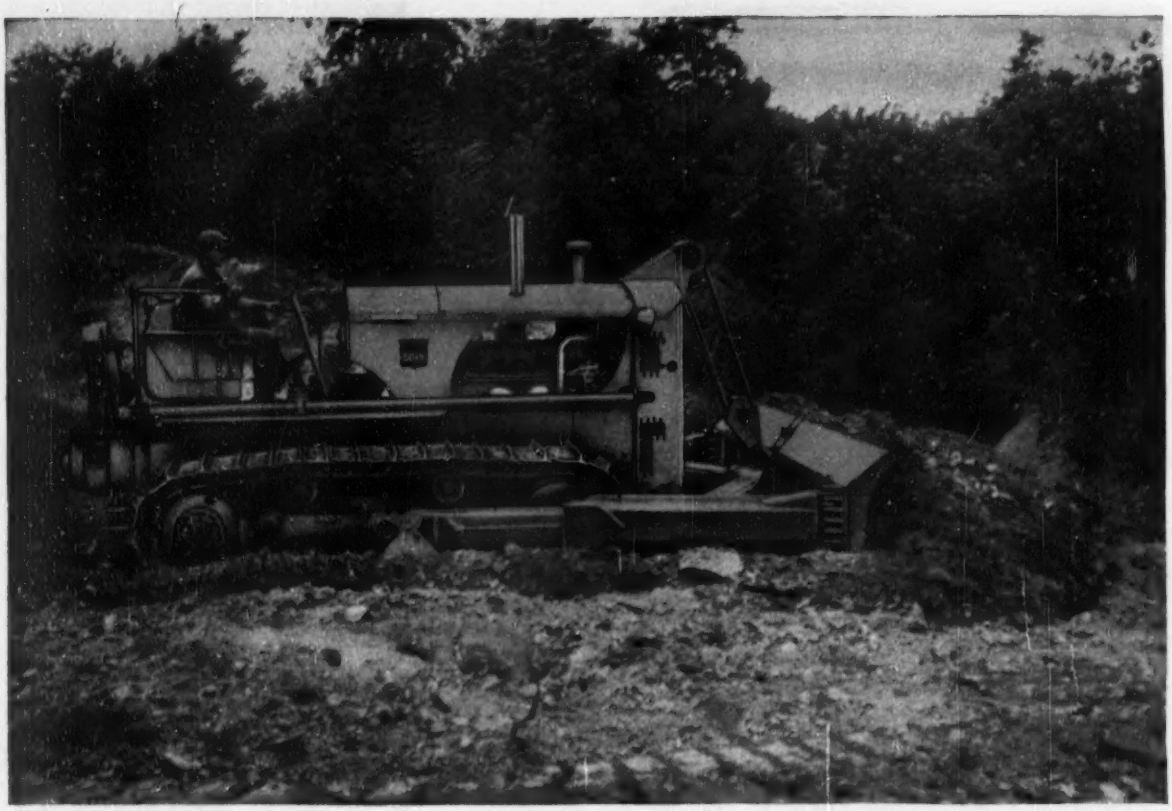

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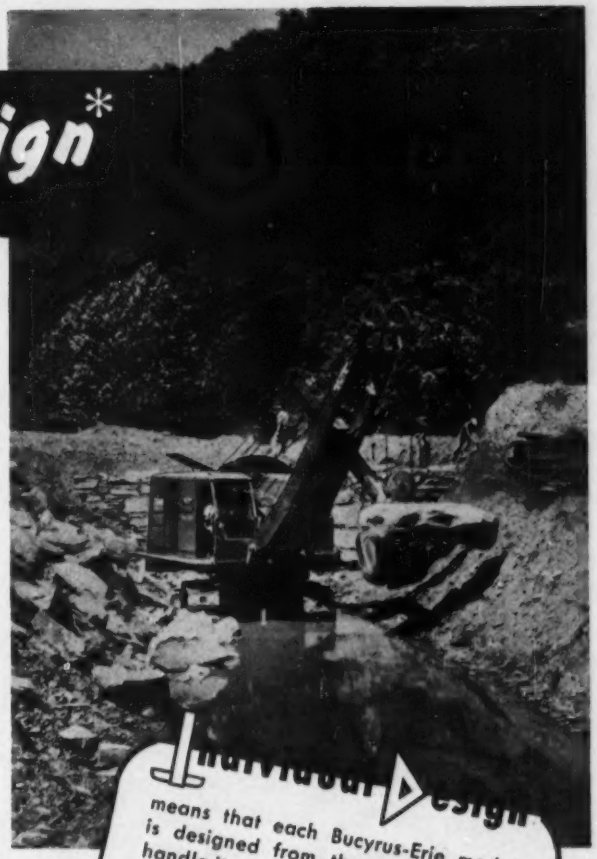

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ENGINEERING NEWS-RECORD

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THE CONSTRUCTION WEEK

SEAWAY BOOM—Upstate (northern) New Yorkers are happily watching development of what looks like a land as well as a construction boom along the 40-mi site of power sections of the St. Lawrence Seaway.

The New York Power Authority (which is to build the power sections on the U. S. side of the river) figures it will have to bring in something like 5,000 construction workers alone to the area around Massena, N. Y.—and build facilities to house and feed them, take care of their families. Meanwhile, industries reportedly already are scrambling for land that'll be near the new power source, and near cheap water transportation.

DIVIDE TUNNEL?—Colorado is taking a look at an unusual financing device, in its efforts to realize the old dream of a vehicular tunnel through the Continental Divide west of Denver.

The device would be creation of an improvement district that could issue bonds against expected revenues, but secured by possible tax levies on property included in the district. The state legislature has approved a 30% subsidy for the tunnel, supplying the rest of an estimated $18-million cost is the problem.

SEGREGATION ISSUE—It'll be worth watching the Florida Supreme Court's action on a segregation issue in Manatee County over use of bond issue funds for school construction.

Property owners contend that money derived from recent bond sales can't be used to build segregated schools, in view of the recent U. S. Supreme Court action. School officials want to go ahead with a segregation program, confident the U. S. court hasn't implemented its ruling, and therefore there's no immediate application.

WHO'S NEGOTIATING?—Employer groups that use young lawyers fresh out of a year or two of experience with the Department of Labor were on notice that labor groups don't like to deal with such "specialists."

Said a top building trades leader (to a group of contractors): "These men have never employed anybody, never worked with their hands, have nothing but the most academic knowledge of labor and labor relations. We've objected for a long time to the Labor Department becoming a training school for 'experts' like this, and we don't think they know enough to deal with our problems."

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WASHINGTON OBSERVER

Dictorial powers over federal housing agencies have been given HHFA Administrator Albert Cole. The authority was slipped in as a rider on the Independent Offices Appropriations Bill.

What Congress did was this: It gave Cole full authority to recognize the Federal Housing Administration, Public Housing Authority, Home Loan Bank Board and Federal National Mortgage Assn., including the assigning of functions and transferring of administrative funds.

The rider is a direct congressional reaction to the housing scandals. Now Cole, if he sees the need, can pretty well control the policies, activities and personnel inside his omnibus operation. To date he has been able to act only as a supervisor and a housekeeper for many of the activities.

A complete overhaul of the HHFA is being drafted and will be sent to Congress early next year for approval. Cole probably will go slow in using his new authority.

•

The new housing law is almost sure to contain language prohibiting "mortgaging out" FHA loans on apartment projects. The House-Senate conference on the bill has agreed to Senate language on mortgaging out, in turn for keeping House language permitting loans and lower down payments on modest, one to four-family houses, as well as equal terms for old houses.

•

The Hell's Canyon hearings before the Federal Trade Commission are grinding to a halt. The hearings had been extended beyond schedule when Idaho Power Co., which is applying for a permit to build three dams on the Snake River, asserted its right to have a last say. President Thomas Roach has completed his testimony, and the hearings will end when attorneys complete cross-examination late this week. Then the commission will take some months to reach a decision.

•

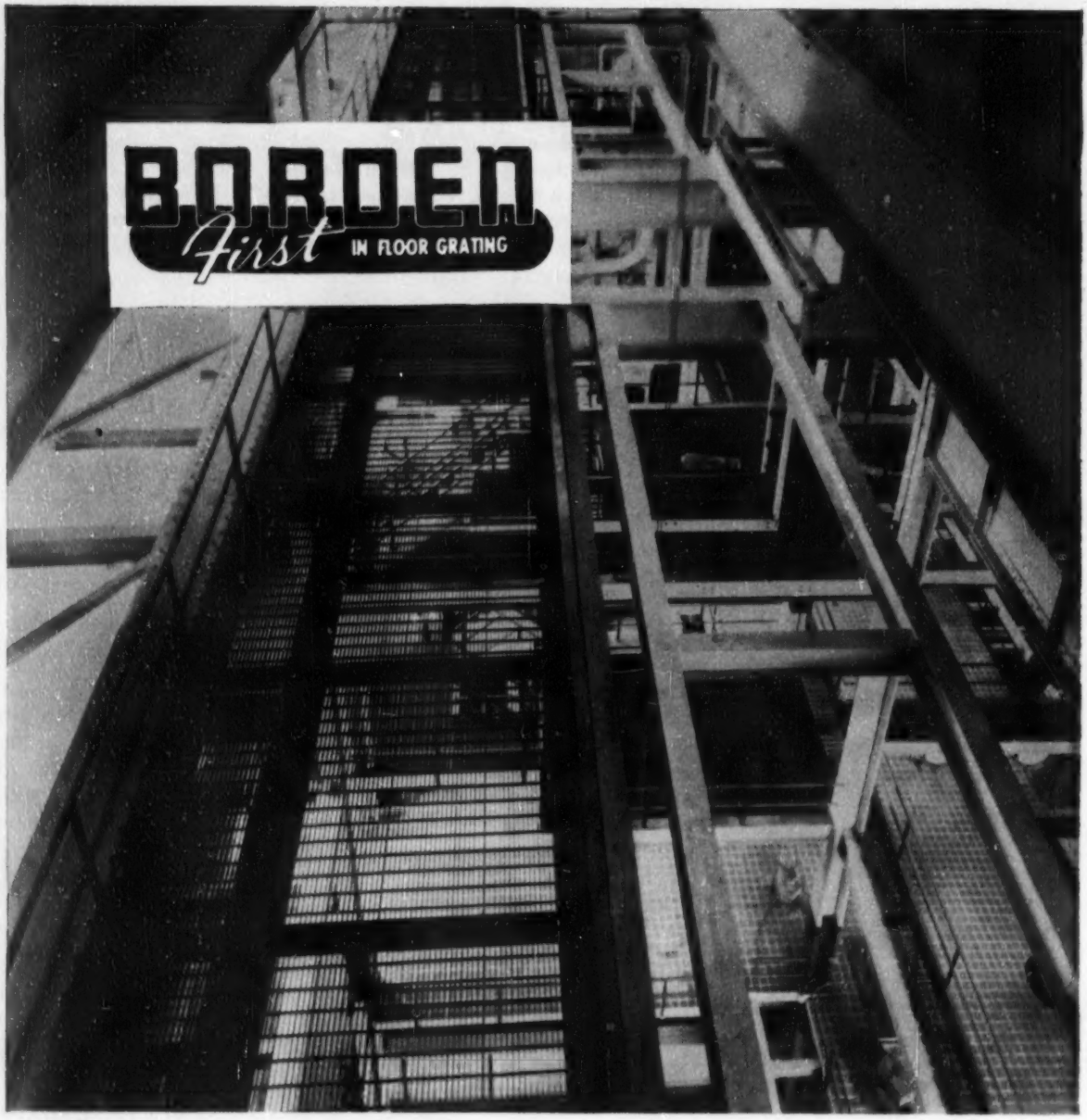
Sen. Guy Cordon of Oregon takes over as chairman of the Senate Interior Committee to succeed Sen. Hugh Butler, of Nebraska, who died last week. Butler's death isn't expected to slow down committee consideration of Upper Colorado water project (see page 26) or other new Reclamation Bureau authorizations.

•

A 40-year-long dispute between AFL carpenters and the International Association of Machinists will be settled soon—giving promise of ending a lot of headaches contractors have had over disputes about which union would get the job of installing equipment on projects, such as turbines at dams, etc. Arbitrators John Dunlap and the Rev. William Kelley are close to getting a jurisdictional accord between the two unions, probably will set up an arbitrator to make final settlements.

•

Eisenhower will win on the AEC-TVA power squabble. There will be a lot of complaining in Congress by TVA partisans, but the private utility contract for construction of a West Memphis, Ark., steam plant will go through. Ebasco Services, Inc., has the inside track for engineering and construction contracts.



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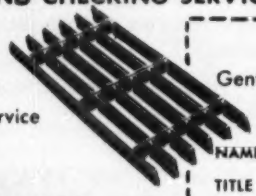

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Midyear finds construction recovered, growing

Regional survey indicates that construction business should continue high throughout U. S. in second half of 1954

An ENR staff report

Contract letting in heavy construction snapped back fast during the second quarter of 1954 from the deep slump of the first quarter (ENR March 4, p. 75). An ENR regional survey shows that the outlook for the second half of this year is for contract awards to continue close to present high levels.

Competition between contractors for jobs will keep right on being tough, because of the great increase in contractor capacity over the past few years.

A record volume of more than $4 billion in contract awards was reported to ENR during the second quarter. That's 5% more than the second quarter of 1953 and 64% higher than the first quarter of this year. Contract awards for the first half are still 14% below the same 1953 period, but they were 34% behind at the end of the first quarter. In spite of the poor first quarter, the $6.5 billion in awards during the first half is the third highest on record.

• **Private awards**—Private construction is responsible for the sharp comeback in the second quarter. Private awards totaled nearly $2.4 billion, a record for this quarter, and only 5% under the record high for any quarter set in the first three months of 1953. Private work in the quarter just past was 16% above private awards in the same period last year.

Mass housing and commercial building are the driving forces behind this surge in private work. For the first half of 1954, housing awards are 5% ahead of the previous first-half record in 1953 and commercial work is up 17% over the first-half record set last year.

Housing contracts were at an all-time high for any quarter during the April-June period, averaging $100 million a week. Commercial building contracts were slightly under the record for any quarter set in the last three months of 1952. But they made a new record for the second quarter.

Industrial awards did not do quite as well. Although volume of $604 million was 50% ahead of the same 1953 quarter, the pace slacked off in June. For the first half, industrial contracts are 35% behind last year.

• **Public works**—Total volume of public awards for the second quarter was well over $1.6 billion, but was off 9% from the same period last year. Although state and municipal work rose seasonally during the first quarter, it was 7% behind the same 1953 period. However, the total of $1.3 billion in awards was higher than for any second quarter before 1953.

The best news in public works was the upturn in federal contracts, which had been declining rather sharply since the second quarter of 1953. Federal contracts for the quarter just ended were $343 million, 66% above the first quarter. However, awards were still 14% under the corresponding period in 1953.

Highway contract volume climbed seasonally during the second quarter. But it was still 7% below the volume in the second quarter of last year. Awards for public buildings (other than housing) also rose in the second quarter, but were 5% below the volume a year ago.

Sewerage was the only major type of public work to show a gain over the second quarter of last year. Waterworks held about even.

• **Regions**—In all regions, volume during the second quarter was much higher than in the first. The increases ranged from 17% in the South to 136% in New England. Other increases over the first quarter: West of Mississippi, 88%; Far West, 81%; Middle West up 72%; Middle Atlantic, up 56%.

However, the perspective changes when second-quarter volume is compared with last year on a regional basis. Increases were: Middle West, up 50%; New England, 32%; West of Mississippi, up 11%; Far West, 7%; Middle Atlantic, up 5%. Contracts were down 45% in the South from the second quarter of last year.

• Regional outlook for second half

Last week, ENR asked correspondents in more than 40 U. S. cities to analyze the general business atmosphere and the prospects for construction in their areas during the next six months. Here are the overall conclusions:

On private work ,the outlook is for a continuing heavy volume of mass housing and commercial contracts, due mainly to the continued migration from cities to suburbs.

The outlook for industrial contracts is not so certain, but indications are that volume will not be far below the second-quarter level for the rest of the year.

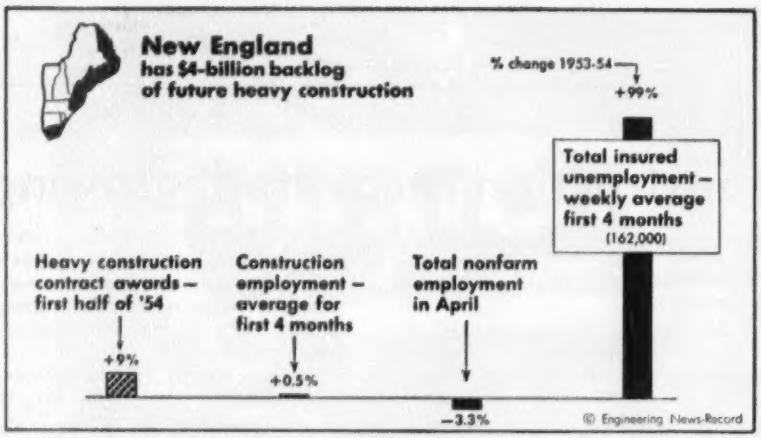
On public works, the signs are that volume will be better in the second half than in the first. The revival in federal awards seems likely to continue, although volume will not be on the scale of 1951 and 1952. There should be a substantial gain in highway contracts, as turnpikes financed earlier this year begin to go under contract. Sewerage and waterworks also should continue at a high level. The outlook is that nonresidential public building—especially schools—will continue strong, even in the South and in spite of the segregation ruling.

All this means that the declines in construction employment shown in most of the regional charts (below) for the first four months of this year will tend to correct themselves as 1954 goes on. The survey shows, however, that the current lower level of bid prices compels contractors to get more productivity from workers this year. Therefore, they probably will not boost their forces in proportion to any increase in business.

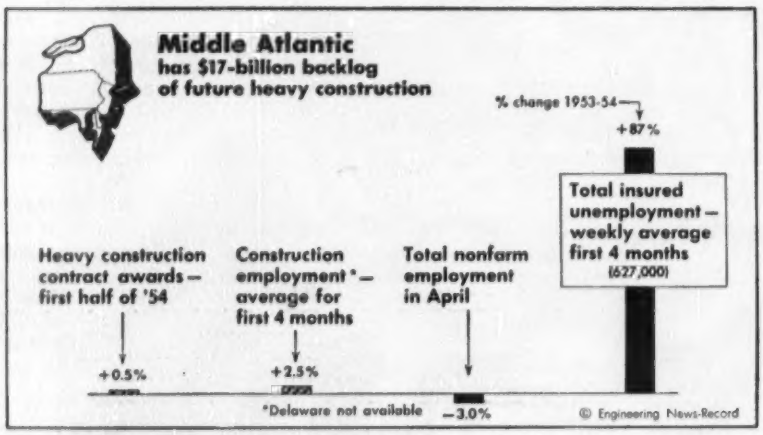
Most of the regional charts also show sharp percentage increases in total insured unemployment. But ENR's survey indicates that no special movement had been launched by states or local agencies to push public construction simply to create jobs. However, by keeping money easy, the federal government is doing much this year to maintain the boom in private and in state and municipal construction.

And this week Secretary of Commerce Sinclair Weeks announced that

(*Continued on page 22*)



Source: Employment and unemployment data from Bu Labor Statistics.



Source: Employment and unemployment data from Bu Labor Statistics.

$875 million in federal aid had been apportioned to the states for highways, six months ahead of the time-limit set by Congress and several months earlier than in recent years. Weeks said this meant the states would let about $100 million more contracts in the next 90 days than would otherwise have been let.

Finally, the survey suggests that competition is not going to be noticeably easier during the second half. Experience, careful management, and sound bidding are going to be the touchstones of success in the construction business during 1954.

• New England

Most businessmen are confident that this is going to be a year of good business in New England. Announcements of plans for plant additions keep coming along. Most of these are of moderate size. One of the biggest pending projects is the $12-million Carling brewery, for which a site was purchased 15 mi west of Boston in June.

Several of the larger paper companies in Maine have expansion programs under way or planned. The largest is a $40-million expansion program by Great Northern Paper Co. at Millinocket, now about half-way complete.

One engineering consulting firm, most of whose clients are in New England, says it will be very busy for the rest of this year, after a quiet first half. It says that plans for plant expansion are well distributed through the six states and among the region's major types of industry, with the exception of textiles. Two insurance companies are said to be planning large office buildings in New England, but no announcements have been made yet.

• **Utilities spend**—There are substantial public utility programs under way. Total spending this year by private power utilities is estimated at $160 million; about the same as 1953.

State and municipal construction volume will compare very favorably with that of recent years. Highway construction goes on at a record pace. One estimate is that highway contracts totaling $1 billion will be awarded in the region during the next three years.

• Middle Atlantic

New York state's government now has about 800 building projects under construction, totaling about $116 million. It has available about $232 million more for construction—on most of which contracts will be let this year. This fall, voters will be asked to approve a $350-million bond issue for a new mental hygiene program, of which about $200 million would go for hospitals.

A sizable boom is growing along the St. Lawrence River, as large manufacturing firms (particularly chemical firms) scramble for choice locations near a new power source and waterway.

• **Delaware Valley booms**—Along the Delaware Valley, in Pennsylvania, southern New Jersey, and Delaware, construction volume during the second half is expected to equal that of the similar 1953 period, and may run ahead (ENR June 3, p. 30). For instance, most of the $64 million the city of Philadelphia will spend this year for facilities will be spent in the last half. That doesn't include public schools, on which $25 million worth of projects is under way. Parochial and private school construction in the area will take another $12.5 million. Penn Center, the new commercial development in central Pennsylvania, will mean many millions of dollars, and other commercial and apartment buildings are planned.

Many millions are being spent on the northeast extension to the Pennsylvania Turnpike. About two-thirds of the contracts for the new $90-million Delaware River Bridge are scheduled to be let in the next six months. State road work, exclusive of turnpikes, will be at an all-time high during the next half year—about $75 million. And the State Public School Building Authority estimates at least $70 million worth of schools will be started by the end of the year.

• **Jersey expansion**—There is considerable industrial expansion under way in southern New Jersey.

Lit Brothers is building a $5-million department store in Camden. And the Atlantic City Electric Co. is spending $150 million for new facilities. The exodus from Philadelphia and Camden to south Jersey suburbs has given homebuilding there a shot in the arm. That means a continuing expansion of schools and other municipal facilities, shopping centers, and separate stores and offices. Planners in the State Department of Conservation and Economic Development say the whole Trenton-Camden area is in the throes of an unprecedented boom.

• South

On the whole, construction prospects in the South for the second half of this year are good. But there are a few weak spots.

Perhaps the brightest spot is Florida, where the Florida Power & Light Co., estimates that the permanent population is growing by 165,000 a year. The company plans to double its present generating capacity by 1961, and is spending $80 million for expansion in 1954 and 1955.

• **Motels make business**—New motels and apartment buildings are springing up all along the coasts, as well as many residential developments. Together with these go shopping centers. Almost every city and town has waterworks or sewerage projects under way or in the planning stage.

Further north, in Georgia, an unusually heavy volume of highway and bridge work is scheduled for the second half of 1954. There is also considerable homebuilding.

In South Carolina, though the $100-million school program has been suspended temporarily, there is a considerable amount of planning on waterworks and sewerage.

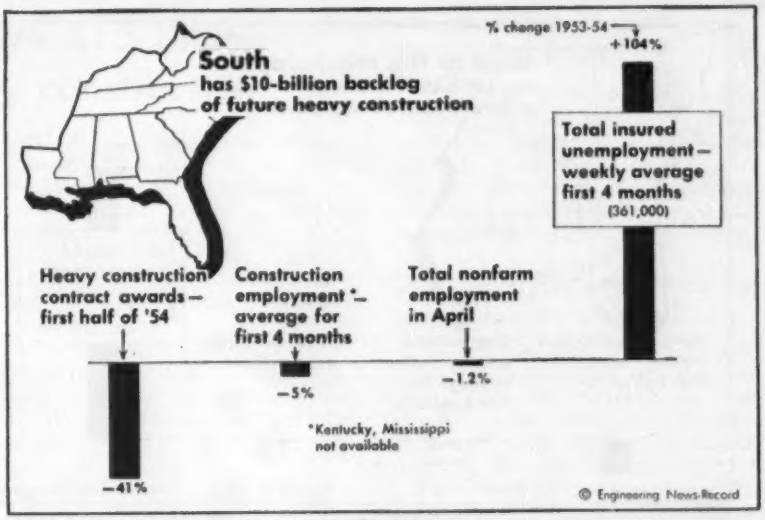
• **Industrial construction**—In North Carolina, several good-sized industrial projects have started. During the next six months, Virginia will start its $55-million Hampton Roads bridge-tunnel linking Norfolk and Hampton and the $15-million Rappahannock River bridge. Possibly the $57-million Richmond-Petersburg Turnpike and the $73-million Southwest Virginia turnpike also will start this year.

In West Virginia, construction will start this year on a $7-million headquarters building in Charleston for United Fuel Gas Co. However, reports are that several industrial expansion projects have been postponed. The state depends heavily on the coal industry, which at the present time is in a depressed state.

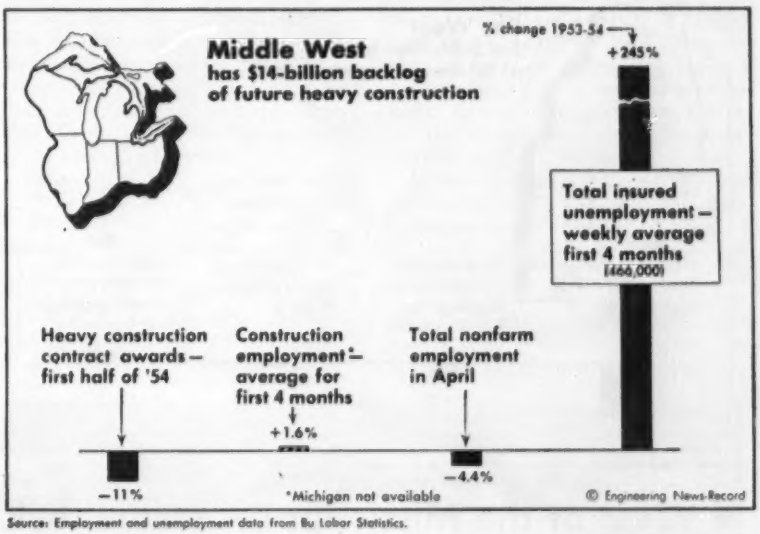
• **New Orleans bridge**—In Louisiana it's expected that contracts for pile driving and foundation work will be awarded this year on the $54-million bridge across the Mississippi at New Orleans. Work also will start this year on a $53-million Joint Air Reserve Training Center near New Orleans.

In Mississippi, state construction is slowing down, while municipal work seems to be up slightly.

In Alabama, the Alabama Power Co. has a huge expansion program under way. In Tennessee, although construction volume is rising, there is still considerable unemployment among construction workers.



Source: Employment and unemployment data from Bu Labor Statistics.



Source: Employment and unemployment data from Bu Labor Statistics.

• Middle West

Chicago has a tremendous bridge and express highway program under way, and a lot more on the drafting boards. It has reactivated its $85-million, 950-mgd filtration plant project at Navy Pier and is building several parking garages to cost about $50 million. Prospects for industrial construction have been improved by the St. Lawrence Seaway project. However, southern Illinois has been hard hit by the decline in coal production.

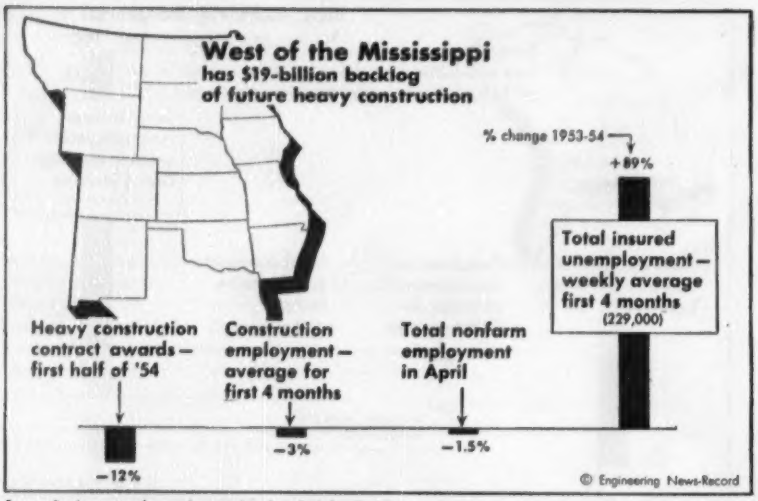
In Indiana, considerable construction will be under way in the second half. Examples: a $4-million community hospital at Indianapolis, and a $5-million plant at Shelbyville for General Electric Co. And, of course, work on the east-west turnpike in northern Indiana is beginning.

• **Possibilities**—There are some possibilities of big projects in Ohio. Kaiser Aluminum & Chemical Corp., is considering a $70-million rolling mill, and an $8-million bromine and magnesium plant near Ashtabula. Union Carbide & Carbon Corp., will build a $30-million titanium-producing plant in Ashtabula if the government gives its OK.

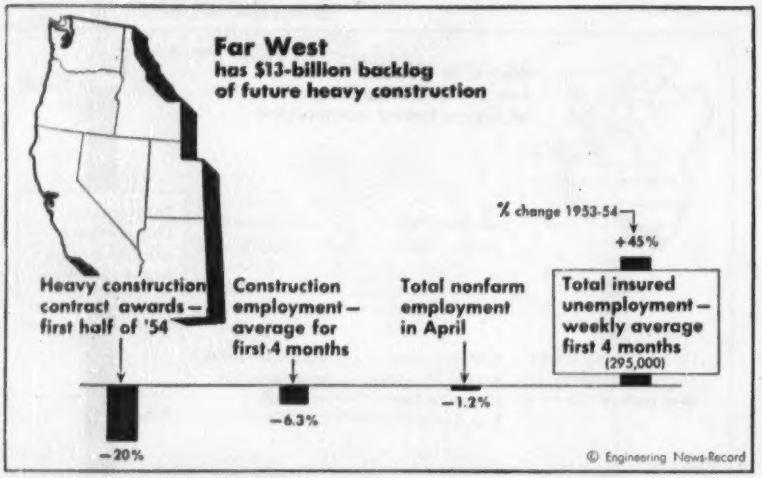
In Wisconsin, there has been a decline in employment, but the trend is reversing itself. Two big shopping centers, each costing about $18 million, will start in the second half.

• **Detroit outlook**—In Detroit, where business hinges on auto production, the outlook is fairly bright. For instance, the number of new house starts this year is expected to beat every previous year but 1950. Home buyers are demanding more for their money, and for the most part are getting it. Old homes are not selling well.

(*Continued on page 24*)


West of the Mississippi
has $19-billion backlog
of future heavy construction
% change 1953-54
+89%
Total insured unemployment – weekly average first 4 months (229,000)
Heavy construction contract awards – first half of '54
Construction employment – average for first 4 months
Total nonfarm employment in April
–12%
–3%
–1.5%
© Engineering News-Record

Source: Employment and unemployment data from Bu Labor Statistics.



Source: Employment and unemployment data from Bu Labor Statistics.

• West of the Mississippi – second half

In the states between the Mississippi and the Rockies, plenty of projects are scheduled to start between now and the end of the year.

Texas, of course, has the biggest volume. Among those scheduled soon are: a $16-million city-county hospital at Houston, and a $13-million building for the Second National Bank of Houston, and shopping centers, residential developments, and office buildings. There are a number of new projects in Texas' fast-expanding petrochemical industry along the coast, including: a $25-million polyethylene plant at Orange for Spencer Chemical Co., a $15-million to $20-million plant for Gulf Oil Corp., at Port Arthur, $23 million worth of plants for Dow Chemical Co., at Freeport, a Koppers Co. polyethylene plant at Port Arthur, probably $25 million; and an $11-million refinery for Texas Co., at Port Arthur.

• **St. Louis confident**—In Oklahoma, the state's largest utility is boosting its construction program this year to $20 million, mostly around Oklahoma City, compared with $12 million last year. Big highway contracts are on the horizon: three extensions to the Turner Turnpike, costing between $150 million to $175 million, should be started before year end.

St. Louis finds homebuilding booming, along with commercial construction. Industrial firms in the St. Louis area have scheduled about 9% less capital spending this year than last. But contractors believe that their volume in the last half will equal the corresponding period in 1953.

In Nebraska, contractors are entering a period of tough competition. This spring, the state highway department found that highway bids averaged a good 10% below engineers' estimates.

• **$52 million in military work**—Omaha District, Corps of Engineers, is planning about $52 million worth of military construction for the second half, about the same level as in recent years. There will be air base work at Lincoln and Omaha, Rapid City, S. D., and Cheyenne, Wyo. In Iowa, the economic indicators point to a good business year.

• Far West

In this region the outlook is quite optimistic.

In Los Angeles, for instance, there is a general feeling that the decline is over and that business will stay at present levels for the rest of the year, with possibly a slight rise by year end.

Members of the Los Angeles Chapter of Associated General Contractors, who cover most of southern California, expect their contracts to run at a 20% higher rate than in the first half, which was itself about 10% above last year. There are still some contracts remaining to be let in connection with the freeway program around LA.

• **More bidders**—However, there is a general belief that competition in heavy construction is worse than it has been in years. Some individual contractors of substance report their own volume down considerably from last year, and complain that because there are more bidders bid prices are often far below engineering estimates.

Around San Francisco, among big projects scheduled to start in the next six months are the $15-million Stanford University shopping Center at Palo Alto; the multi-million-dollar Standard Oil Co. of California plant at Richmond; and Utah Construction's 10-year, $100-million Morage Valley Shopping Center near Oakland.

Further north, in Portland, Ore., a couple of huge shopping centers are scheduled for next year.

In Washington, the situation is improving. Among big jobs coming up are a $17-million dam for Seattle City Light, a $10-million government-financed flight test center for Boeing Airplane Co. The Southwest Seattle Sewer District will call for bids this fall on the first units of a $10-million sewer system.

• **Air Force Academy**—In the Rocky Mountain States, construction is in good shape. Naturally, the biggest upcoming job in the area is the $125-million Air Force Academy near Colorado Springs. Idaho is the only state here where heavy construction seems likely to be below the second half of 1953. Bureau of Reclamation jobs are important in this area.

Congress slated to vote $1.5 billion this month for military construction

Congress has cleared the way for final action on nearly $1.5 billion in supplemental construction appropriations before its expected July 31 adjournment.

Construction funds in regular appropriation bills passed before July 1 amount to nearly $2 billion. The supplemental appropriations are primarily for military construction.

House appropriations subcommittees are working on White House requests for money to be included in the supplemental measure. Among the additional construction funds that the President has asked for are: $1.1 billion for military public works, $22 million to revive the federal-aid airport program, $20 million for roads, and about $10 million for other purposes including money to start several new irrigation projects.

Another big request is expected—for some $350 million—to finance the construction of housing on military bases. An Administration bill to authorize this housing is well on its way through Congress. With $350 million to support the military housing program, construction funds in the supplemental appropriation bill may add up to $1.5 billion.

Approval of that amount would push the new construction money voted at this session close to $3.5 billion. Unspent funds of the Defense Department and the Atomic Energy Commission—plus government loans to local public housing authorities during the year—would supply the remaining dollars for estimated federal construction $6 billion in the next twelve months (ENR July 1, p. 21).

• **Four Missouri Basin projects**—Eisenhower at the end of March asked for money to start construction this year on four new reclamation projects in the Missouri River Basin. Less than $2 million was requested to initiate work in fiscal '55. The House Appropriations Interior Subcommitee had not approved the projects up to this week, but it is expected to act on them soon. The four are Bluff Unit, Wyo.; Heart Butte, N. D.; Helena Valley, Mont., and Sargent, Neb.

New highway money proposed for the supplemental bill will help to generate a sizable volume of contracts this year. Combined with funds from the regular appropriation acts, the added money will allow the award of more than $50 million of new road contracts for the Forest Service, National Park Service and Bureau of Indian Affairs.

Additional supplemental appropriations will be required for the current fiscal year after the next Congress convenes in January 1955. An example is federal-aid highway funds. The Administration estimated that $555 million would be needed for the year, as compared with a total of $530 million appropriated last year. But Congress cut the request to $500 million in the regular appropriation bill cleared last week, with the understanding more would be voted later in the year, when needed.

Florida Orders Tolls Lifted On Overseas Highway Link

Tolls have been removed from the Overseas Highway in Florida, the 122-mile link between Key West and the mainland, part of which was built on viaducts of the Florida East Coast Ry.'s abandoned line over the Florida Keys. Tolls were collected on a 42-mile link in the highway.

Removal of tolls has been under study for some time by the State Road Department, but final action by Acting Governor Johns was precipitated by exposure of alleged irregularities in the operations of the Overseas Road and Toll Bridge District, which operated the toll highway. Investigations resulted in indictment of two men, including the general manager. Action against the two men is still pending.

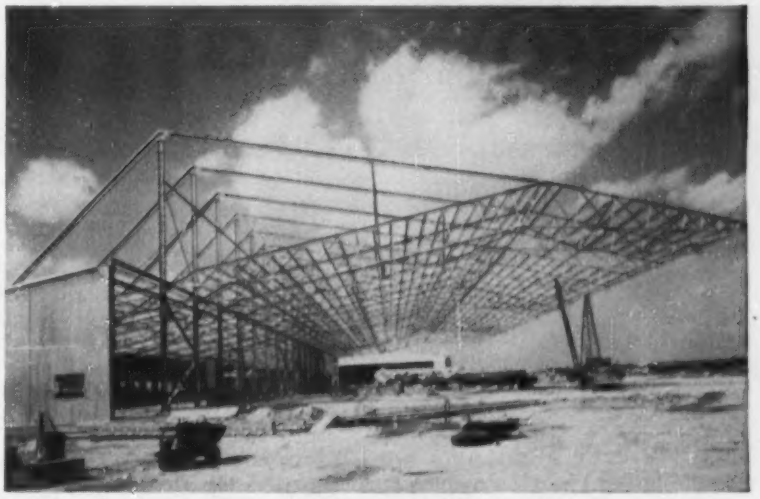
As a result of the disclosures, the governor dismissed the district commission and turned its affairs over to the State Road Board. At the same time the Governor's cabinet ordered tolls removed and voted to pay off the $1,266,000 in bonds still outstanding.

Ohio hires engineer firms to speed highway program

Sparking the state's eight-year, billion-dollar roadbuilding program, the Ohio Highway Department has awarded 14 consulting engineer contracts totalling $2 million and was to negotiate other contracts this week.

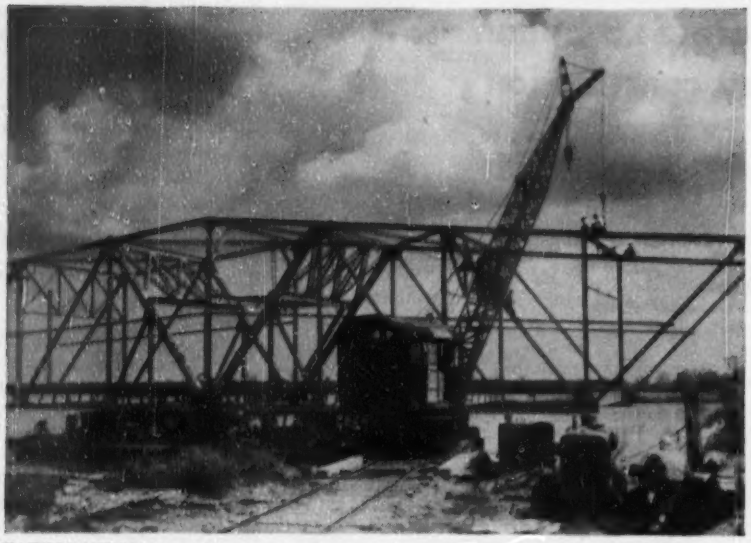
The first 14 contracts cover projects with an estimated cost of $90 million and involve detailed plans on 133 mi and preliminary study on 31 mi. Bypasses, bridges and a variety of special construction problems resulted in negotiated fees for engineering services ranging from 1.95% on a stretch of Route 40 west of Springfield to 3.95% for the complicated Spring-Sandusky interchanges in Columbus.

In setting up its accelerated highway building program last year, the state legislature made a drastic overhaul of the highway department's administrative machinery (ENR July 23, 1953, p. 23). It also authorized the highway department to employ consulting engineers for the preparation of plans for projects costing more than a million.

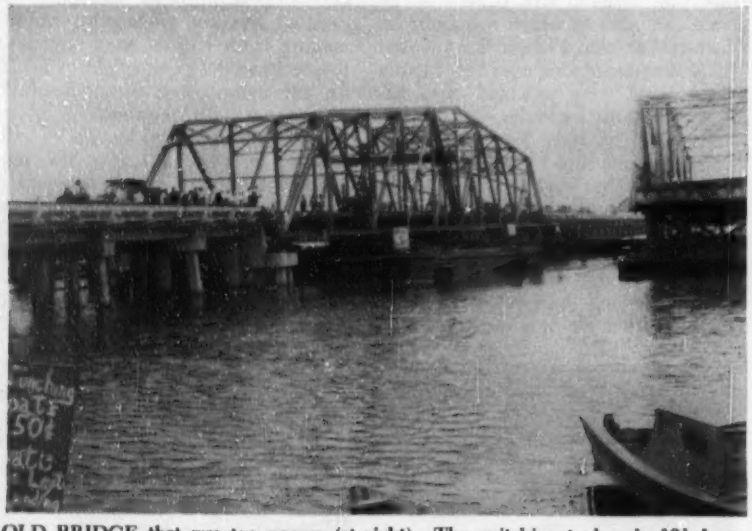


Another suspended-cantilever hangar

A 435 x 161-ft production hangar with a suspended roof, built for Temco Aircraft Corp., at Greenville, Tex., is supported on cantiliver trusses. Under the main section of the roof is a 435 x 121-ft area without columns. Design is similar to one used for a hangar at New York's International Airport. But the N. Y. structure has a roof cantilevering from opposite sides of a central mast (ENR July 23, 1953 p. 31), while the new hangar has only one cantilever. Lighting from 1,671 fluorescent lamps is planned to eliminate shadows. Irwin Newman Construction Co. of Houston, Texas, is the general contractor.



FABRICATION of a 240-ft swing span was done on barges in the Savannah River and the span was towed upstream to replace . . .



OLD BRIDGE that was too narrow (at right). The switching took only 19½ hours.

Barges place span after off-site erection

To prevent a long interruption of traffic on a main arterial highway, the American Bridge Co. set up a prefabricated 240-ft through-truss swing span over the Savannah River near Savannah, Ga., in less than a day.

The bridge span was fabricated on barges at Port Wentworth, near Savannah, and towed a few miles up the river to the bridge site on U. S. Highway 17. It replaced an old steel span 18½ ft wide—too narrow for the heavy traffic on the highway. The new bridge is 28 ft wide overall.

Barges, on which the span was fabricated, were tied to a wharf served by a railroad spur, from which a locomotive diesel crane, with a 40-ft boom and 16-ft jib, did the lifting.

On moving day, U. S. Highway 17 was closed to traffic at 7 AM and re-opened at 2:15 AM the next day. During that time the old span was moved on barges from its piers and the new span moved into place. Connecting and supporting bridge work had been completed by the general contractor, the McMeekin Construction Co., Cheraw, S. C. General contractor for the additional bridge work is the C. Y. Thomason Co., Greenwood, S. C.

The new bridge is one of the final links in a $1-million project financed jointly by the highway departments of South Carolina and Georgia to improve Savannah River crossings between the two states.

Upper Colorado plan

$1-billion storage and irrigation scheme has strong Senate support

Senate approval of the proposed billion-dollar Upper Colorado storage and irrigation plan looks like a sure bet.

Despite opposition on the part of California and conservation interests at last week's hearings on the bill, a favorable committee report was expected to come up for Senate action this week. Betting was that the Senate would quickly approve the committee bill.

The Senate bill was expected to include a few projects omitted from the measure that the House Interior Committee recently approved by a close 13-12 vote. Almost sure to be added was the Navajo irrigation reservoir with initial authorizations looking toward construction of the Shiprock and South San Juan divisions of the Navajo project and future San Juan-Chama diversion through the Continental divide. Sen. Clinton Anderson has strong support for these projects which will be beneficial to the state of New Mexico.

Interior Secretary McKay last December recommended the Shiprock division, including Navajo reservoir and canal capacity for the South San Juan division, at an estimated cost of $235 million. But the Budget Bureau knocked out that part of the plan. It would boost the initial phase of the Upper Colorado project close to $1.2 billion.

Sen. Edwin Johnson's added starters for the state of Colorado (ENR July 1, p. 19) are much less likely to be pushed hard in committee. The proposed Blue River diversion to supply water to Denver likewise will be sidetracked.

Californians are against the plan for paying off the irrigation features out of power revenues after the cost of power features had been amortized with interest—a precedent-setting policy for financing water projects.

Conservationists, as before, opposed Echo Park Dam in Dinosaur National Monument. But there was no talk of dropping this big storage reservoir from the Senate bill.

It may be held as a trading point, if necessary, to get the bill through the House vote after the Senate acts. In event of a close floor fight, Echo Park might be sacrificed—with the hope that it would be retained in conference between the two houses and eventually confirmed in a vote on the conference report.

Florida pike: What'll it cost?

Engineers differ sharply before Florida Turnpike Authority on cost estimates for Miami-Fort Pierce toll highway

Whether Florida's turnpike from Miami to Fort Pierce can be built for $62 million or will cost $89 million was the subject of a spirited difference of opinion between representatives of two engineering firms at a tense two-day session in Tallahassee. The meeting was called by the Florida Turnpike Authority at the request of LeRoy Collins, nominee for governor, who is expected to take office next January.

The disagreement occurred between R. N. Bergendoff, representing Howard, Needles, Tammen & Bergendoff, who made a survey of the proposed route last year for the original turnpike authority and came up with a $62-million estimate, and Maurice N. Quade, representing Parsons, Brinckerhoff, Hall & Macdonald, who made a survey for the present authority, and put the cost as $89 million.

Bergendoff defended his firm against "reckless charges" which he said had been made by Turnpike Authority Chairman Marvin Adams that his firm had underestimated the cost of the work. He still insisted the proposed turnpike could be built for $62 million, barring drastic policy changes.

Turnpike Chairman Adams asked whether Mr. Bergendoff would be willing to bond his firm to do the work for that amount. The latter declined the proposal as unorthodox, but added, "I am willing to stake my reputation."

Bergendoff's figures were disputed by Mr. Quade. In an item-by-item listing, he accounted for $7 million which he said the Bergendoff firm underestimated. He said the underestimates were in the field of feeder roads, right-of-way costs, raising of road level above flood waters, length of bridge structures and the cost of service areas.

Quade conceded that his own estimates of cost per sq yd for paving were generous, $3.40 as compared with $2.50 in the Bergendoff report and $2.40 now being obtained by the Florida State Road Department, but he said paving costs are likely to rise when contractors get plenty of work to do.

Meanwhile, State Representative Thomas E. David of Broward County dropped a bombshell by proposing that present turnpike plans be curtailed until consideration of a 300-mile turnpike from Miami to the Georgia border can be considered by the 1955 legislature.

Quade, the Turnpike Authority's consulting engineer, said a 200-mile extension of the toll road to the Georgia line could be constructed with a $153-million bond issue, or an average of $765,000 per mile.

Duncan Gray of B. J. Van Ingen & Co., fiscal agents for the turnpike board, said the bond market would look with suspicion on a toll project if the price tag were lowered from the present $89 million. But under questioning he agreed that a reduction in cost would bring a lower interest rate and would enhance the feasibility of a later 200-mile northern extension.

Under current plans, toll revenue on the turnpike the first five years is expected to cover the $89-million bond service 1.40 times as compared with 1.16 on the Maine Turnpike and 1.42 on the Ohio Turnpike.

Clifford H. Stanton of Coverdale & Colpitts, New York, said that the type of turnpike construction would not affect toll revenues as long as there was an unimpeded flow of traffic. He said, "We would not expect less revenue under a $62-million turnpike."

Latest development in Florida's complicated toll road planning is an announcement by State Representative Ted Davis of Hollywood, who is speaker-designate of the House, to place before the next session of the legislature a proposal for a "comprehensive toll road program to serve the entire state."

$211 million for Texas roads

Texas is planning a $211-million highway program for the years 1955 and 1956, according to E. H. Thornton, Jr., chairman of the Highway Commission.

The program includes the construction or reconstruction of approximately 2,662 mi of highways and the replacement of 18 old bridges with new structures. Approximately $43 million of the total is earmarked for work on highways within the limits of Texas cities.

Electronics testing requires wood structure

Because large amounts of steel would interfere with accurate testing, the Boeing Airplane Co. has built a new electronics building at Seattle principally of wood. Columns for the new structure are glue-laminated.

A small portion of the building is two stories high, thus qualifying it as one of the few structures more than one story high to be constructed of laminated timber. The building is 120 x 300 ft, with 58,000 sq ft of floor space. Laminated girders are 12¼ in. wide, 32¼ in. deep and 40 ft long, their unusual depth being due to the heavy testing equipment they will have to support. Main columns are 12¼ x 14¾ in., 20 ft high.

The structure was designed by the Austin Co. and built by Mowat Brothers Construction Co., with Timber Structures Inc. fabricating the girders. All are Seattle firms.

Rio Grande floods

For five days last week a 200-mi stretch of the Rio Grande from Del Rio to Laredo, Tex., experienced its greatest flood in history. Exact figures on its hydraulic magnitude, physical damage and death toll are still lacking, but these facts are fairly definite:

The flood had its origin in cloudbursts in the rocky, non-runoff-resistant valleys of the Pecos and Devil's Rivers north and west of Del Rio. It ended in the great reservoir made ready to receive it when the International Boundary Commission's Falcon Dam was completed last fall 75 mi below Laredo.

Spans of five international bridges, located at Del Rio (2), Eagle Pass, and Laredo (2) were washed out.

River gages registered stages from 7 ft to 10 ft above the previous high water marks set in the flood of 1932. At Laredo, the maximum stage was 62.21 ft compared to 52.2 in 1932.

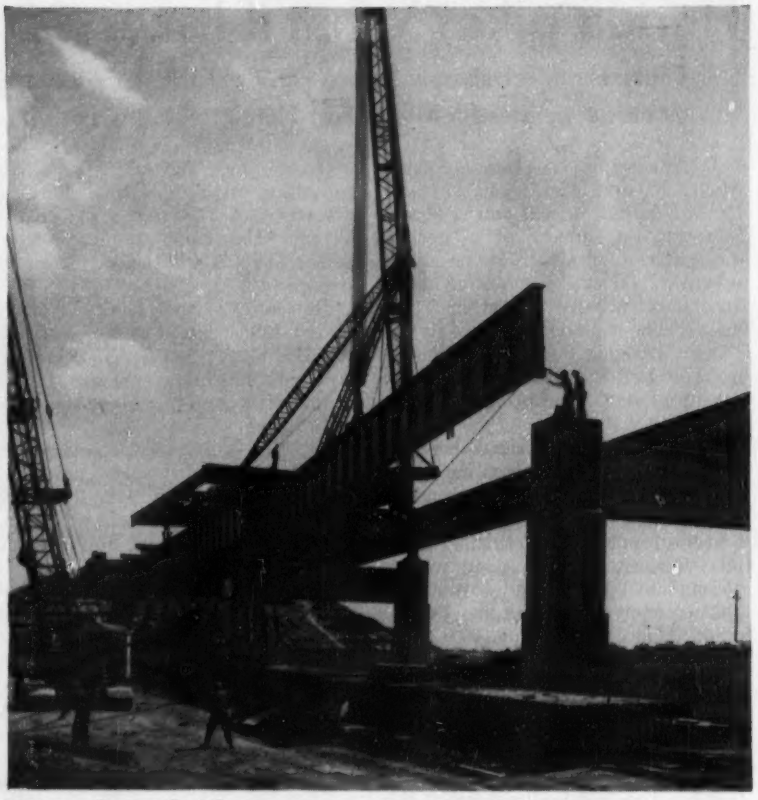
Jobs in the news

STOCK EXCHANGE BUILDING—A $15-million, 27-story, air conditioned building will be erected at 20 Broad St., adjoining the New York Stock Exchange by General Realty and Utilities Corp. Column-free space from the second to the fifth floor will be accomplished by steel trusses spanning the width of the building to provide space for possible future expansion of the Exchange's trading floor. Kahn & Jacobs and Sydney Goldstone are architects.

DAM BIDS—First bids for the construction of the $140-million Cannonsville dam to augment New York City's water supply will be taken July 20 by the New York Board of Water Supply. Bids will be for test borings.

BRIDGE—Louisiana Bridge Co., Kenner, La., (Brown & Root, Inc., Houston, Tex., and T. L. James, Ruston, La.), were joint low bidders at $30,677,210 for the contract to construct the Greater New Orleans Expressway and approaches over Lake Pontchartrain.

SOUND LAB—Westinghouse Electric Corp., will build a new multi-million-dollar sound laboratory and transformer test center at its Sharon, Pa., transformer division plant. The soundproof room will be big enough to test transformers weighing up to 400 tons. Floor will be concrete three ft thick; walls five ft thick will be made of concrete and glass fiber with several inches of air space. The building was designed by Prack and Prack of Pittsburgh and the sound laboratory by Commonwealth Associates of Jackson, Mich. Construction bids are due within two weeks.



Waterfront bridge to contain record girders

Under construction in Buffalo, N. Y., steel girders, are being placed by Derrick-traveler for the $12-million High Level bridge over the Buffalo waterway in the industrial lakefront of the city (ENR Feb. 19, 1953, p. 126). By October work will have progressed to placing of the 5,803-ft viaduct's two longest spans: each one comprising a 208-ft suspended span with a 70-ft cantilever arm at both ends. These 348-ft plate girder spans over the waterway channel will be the second longest in the U. S., the 375-ft Passaic and Hackensack River crossings of the New Jersey Turnpike being longer. With 100-ft clearance above low water, the suspended spans will replace the function of bascule bridges on Fuhrmann Boulevard. Girders are fabricated and erected by the Bethlehem Steel Co., Bethlehem, Pa.

Asphalt Institute to build research lab

The Asphalt Institute has completed arrangements with the University of Maryland for the construction of a $215,800 research laboratory and office building on the university's campus at College Park, Md.

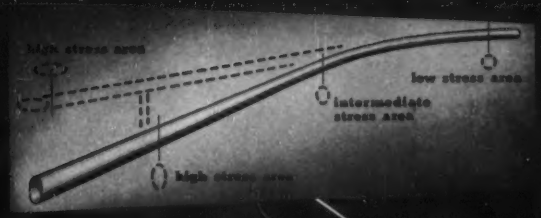
The Georgian-style building will be erected by the F. H. Martil Company of Washington, D. C., the low bidder on the job. The Institute will rent the building on a self-liquidating basis.

The building, designed by Ted Englehardt, Washington architect, will contain 6,500 sq ft. It will have a basement for storage purposes, a first floor for laboratory work, a second floor for research and offices and an attic for ventilation, air conditioning equipment and storage. Separate ventilation exhausts will be provided for various firing devices in the laboratory. Englehardt said construction will begin in about a week. Completion is scheduled for December 15.

Arvin Wellborn, chief engineer for the Institute, said more than $100,000 of equipment, including a small experimental asphalt plant, asphalt mixers and compacters will be installed in the building. About 14 persons will be on the institute staff at Maryland when the building opens.

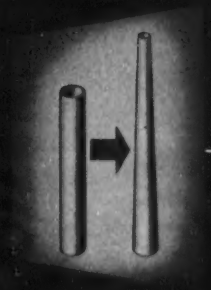
University of Maryland officials said the Asphalt Institute will be completely independent of the university, but Institute research personnel will work closely with the university's chemistry, physics, mathematics and engineering departments.

Jesse Everett Buchanan, former president of the University of Idaho, is the new president of the Asphalt Institute, succeeding Bernard E. Gray, who headed the Institute for 30 years.



FIRST to provide ample strength in all-aluminum arms and arm-shaft joints through patented, seamless elliptical arms requiring no bracing for lengths up to 8 feet. On longer arms, one horizontally elliptical member, integrally welded to the arm, eliminates need for side-sway bracing.

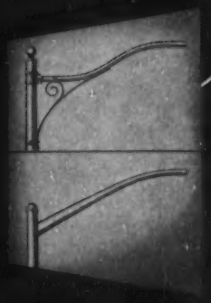
FIRST to develop fabricating equipment and methods to permit use of high strength aluminum alloys.



FIRST to develop and produce seamless, tapered shafts from high-strength, extruded tubing in a wide range of diameters.

FIRST to pioneer the Aircomatic method of welding for fast, strong welds and negligible deterioration of alloy strength. All P & K welds are guaranteed . . . all P & K welding personnel and equipment is certified by U. S. Government agencies.

FIRST to stress use of castings of heat-treatable aluminum alloy, and first to introduce permanent mold castings for transformer bases, shoe and pedestal bases . . . with smooth surfaces and strong grain structure.



FIRST to eliminate unnecessary scrolls, tie-rods and other ornamental frills.

FIRST to design and build its own tapering machine to handle all diameters of extruded aluminum tubing.

Seven firsts . . . . . All are P&K

P & K . . . Producer of America's Most Modern All-Aluminum Standards and Brackets

FOR LIGHTING

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SLIDES are a major source of trouble on most mountain sections of highway work in Colombia. This grading is west of Manizales.

Colombia modernizes its highway system

Forest H. Green
Assoc. Professor of Highway Engineering
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Modernization of 2,000 miles of the basic highway system of Colombia, South America, under a three-year program adopted by the Ministry of Public Works, has passed the halfway mark. This work constitutes the largest highway-building operation ever undertaken on that continent.

North American contractors and engineers are participating and financing is being supplied in part by the International Bank for Reconstruction and Development.

Colombia is an extremely mountainous country, containing three branches of the northern end of the Andes range. Mountain passes on trunk highways are as high as 12,000 ft., and one section of main road near the Venezuelan border follows the ridge of the Eastern Cordilleras for a long distance, at an altitude of approximately 10,000 ft.

Because of this condition, Colombia never has had adequate transportation facilities. The Magdalena River, with its port on the Caribbean at Barranquilla, has been the principal means of transport since the time of the Spanish occupation. However, the river does not provide a dependable route for traffic throughout much of its length. A new railroad, now under construction, paralleling the river, will provide a connection between the existing railroad network and the portion of the river that is suitable for boat traffic throughout the year, even during the seasons of low water.

The existing railroad system in Colombia serves only a portion of the populated area of the country. Steep mountain grades and the low standards used in some of the original construction hinder the economical transportation of freight and passengers on most of the routes. However, a new program of rehabilitation is now under way.

• **Difficult highway construction**—The rugged terrain also has made highway construction difficult and costly. Although large investments have been made in highway construction during various periods since 1920, until recently no real program for the development of a national highway network has ever been undertaken.

Partly as the result of a comprehensive economic study which was made in Colombia four years ago, it was decided to develop an extensive program for constructing and reconstructing a system of trunk highways, to be designated as the Plan Vial. This network was to include two north-south routes for the full length of the country, and also three routes crossing the country from east to west. About half of the routes which were selected are a part of the Pan American Highway system.

Out of the original system of 5,000 kilometers, it was decided to include 3,100 kilometers in the first three-year program of construction and reconstruction.

Fortunately, considerable skill was applied to the location of most of the road system. Its chief deficiencies were in width, surfacing and maintenance. Hence most of this initial program was centered on reconstruction of existing highways.

• **Financing for the program**—The International Bank for Reconstruction and Development, which had participated in the planning of the program, was requested to loan funds to provide for the purchase of imported equipment and materials, for the salaries of a limited number of foreign personnel, and for a portion of the fees to foreign contractors. The government was to finance the remainder of

MUCH of the new road work in Colombia is on routes that form part of Pan American Highway System.

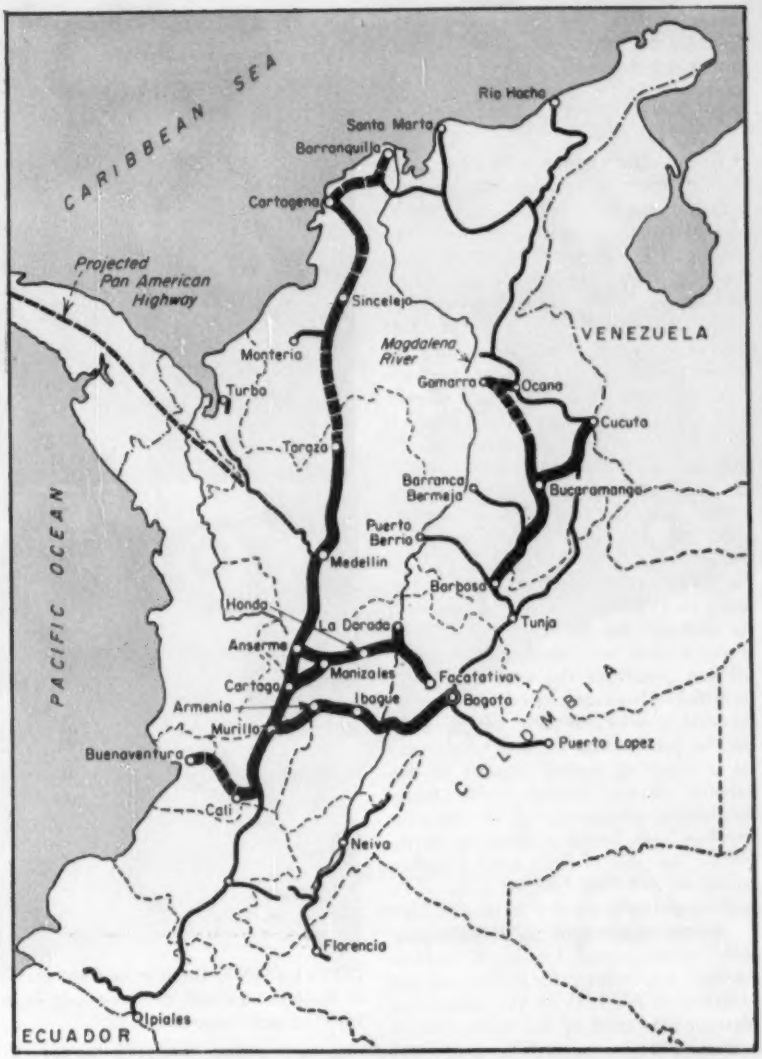
the cost with local currency from current appropriations.

Preliminary estimates were made to include construction and reconstruction to specified standards, with bituminous paving on approximately 15 percent of the 3,100 kilometers, and the maintenance of the roads for the duration of the contracts. Foreign currency costs were estimated to be $16.5 million and the local currency cost was established at 70.5 million pesos. (Current rate, 2.50 pesos equals one dollar.)

A loan of $16.5 million was negotiated with the bank for the foreign currency portion of the cost. A second loan of $14.35 million followed a recent re-estimate of the work, which was based upon construction experience, and included an additional paving program of approximately 2,100 kilometers, also an additional 50 kilometers of highways.

The re-estimate has increased the costs to $27.7 million and 171.9 million pesos. At the current rate of exchange, this represents a total investment of $96.5 million, a tremendous highway program for any South American country to undertake.

Most of the work was divided into five contracts, and was awarded to large foreign contracting organizations (see table), each of which was already established in Colombia and had formed a partnership with a Colombian firm. The contracts are on a fixed-fee basis. On a typical contract, the contractor was to receive a fee of 7.9 percent, based upon the original estimate of cost, with 60 percent of the fee to be paid in dollars and 40 percent in pesos. Since the contracts were first written, the amounts of the fees have been adjusted to cover the additional work which was indicated by the increased estimates of costs.



HIGHWAY WORK included in program is shown by heavy lines. It is largely rehabilitation of existing roads, with relocations along routes shown as broken lines.

• **Character of current work**—The present contracts include the construction or reconstruction of the grade, the placing of an aggregate base to a minimum depth of 6 to 8 in., the construction and repair of structures, bituminous paving, and road maintenance during the life of the contract. As minimum standards, the contracts specify a roadway width of seven meters (22 ft), with clear widths on bridges of 6.1 meters.

Grades are to be maintained at a seven percent maximum.

Although these standards are being applied whenever practicable, there are a few locations, in heavy mountain terrain, where exceptions have been made. On the other hand, where possible at little cost, the width of the roadway has been increased. The construction of several large bridges has been made a part of the contracts.

Also included in the terms of the contracts are provisions for the training of Colombian personnel and the construction of permanent shops. The contractors are responsible for the preparation of the plans for the work.

The contractors have employed a total of 116 foreign engineers, superintendents, mechanics and equipment operators to work with Colombian personnel. The men who have been brought into the country have proved to be exceptionally competent.

There are many qualified Colombian highway engineers, both on the contractors' staffs and in the Ministry of Public Works, who are gaining valuable experience by taking part in this program. Colombians are proving to be good mechanics and equipment operators, and many competent superintendents and foremen are in charge of various sectors of the work.

The contractors have imported or have on order construction equipment and repair parts which will cost more than $15 million. Most of it has been purchased in the United States. The list includes more than 300 dump trucks, 45 shovels, 15 motor graders, 35 crushing plants, and two large hot-mix asphalt plants. Additional equipment was made available by the Ministry of Public Works.

Shop equipment has been another major item. The responsibility of selecting and obtaining the new equipment has been placed entirely with the contractors, although the title to the equipment has been retained by the Colombian government.

The accompanying table of estimated quantities of the major items of the contracts indicates the large amount of work which is being undertaken in this three-year construction program. The quantities are approx-

(*Continued on page 32*)

imate, and do not include the additional excavation which may be necessary because of slides which will occur during the next seasons of heavy rains.

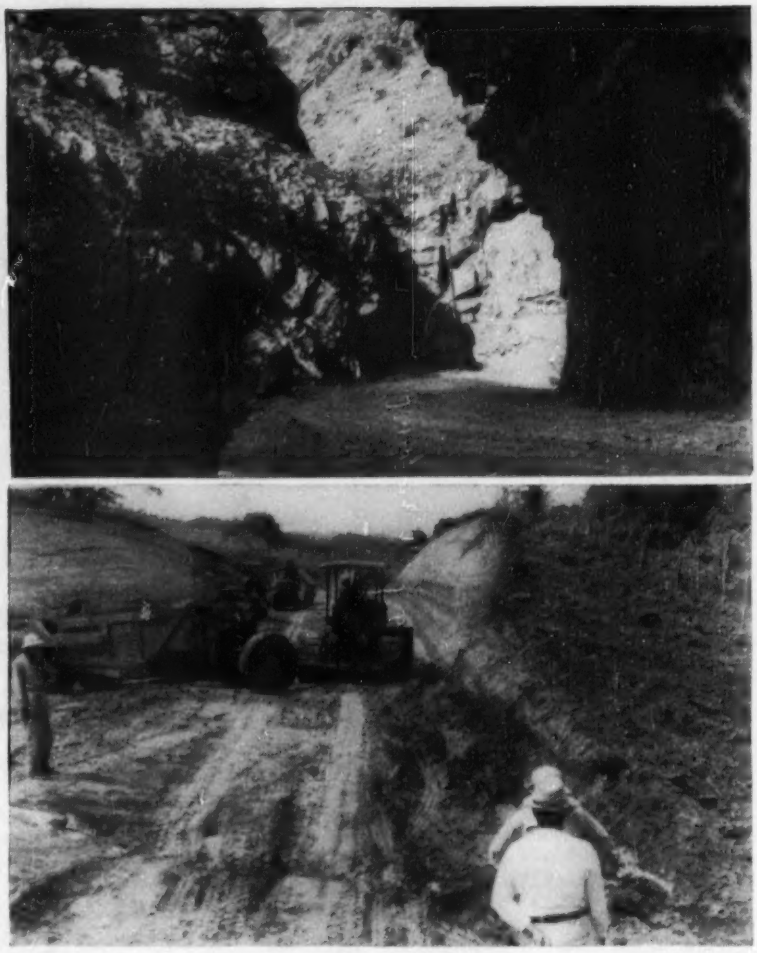
• **Colombian engineers in charge**—In accordance with a Colombian custom, a firm of engineers, called interventors, was assigned to each of the five contracts. These engineers, all Colombians, are responsible for expediting the work by obtaining right-of-way and providing other necessary contracts with the public. They check and approve all reports and accounts, and approve all purchases. They also inspect the work and approve all plans which are prepared by the contractors. In general, this group of engineers acts as resident engineers, but have the added responsibility of providing accounting control on these administrative contracts.

Work on this project was begun early in 1952 and the completion date is now set for the middle of 1955. Progress has been good, and in terms of unit quantities, the work is ahead of schedule. However, partially because of general under-estimating of the work in the preliminary estimates, and also as a result of several seasons of unusually heavy rainfall with many landslides developing, all of the contractors have found it necessary to increase the pace of their grading operations, in order to complete the work on time.

A large amount of additional heavy grading equipment, totaling $3 million in cost, was ordered for delivery in the summer of 1953. With this additional equipment, most of the work, except a part of the paving, will be completed by the end of 1954, which is almost within the original contract schedules.

• **Subcontractors employed**—Late last year, subcontractors for grading, paving and bridge construction were let to Colombian contractors to give them an opportunity to participate in the program. Grading and paving contracts are as long as 20 kilometers.

These contracts are on a unit-price basis, the contractor providing his own equipment. The prime contractor supervises the work, pays the costs, and is held primarily responsible for completion on schedule.



CONTRASTS in the type of construction. The top picture is in the mountains south of Bucaramanga and the lower one is in the northern part of the country between Sincelejo and Cartagena.

Contractors on Colombia highways

Morrison Knudsen & Cia. de Colombia S.A., 730 kilometers, from Barbosa through Bucaramanga to Cucuta, near the Venezuelean border, from Bucaramanga to Ocana, and from Ocana to Gamarra, on the Magdalena River.
Under a separate contract 366 kilometers, from Bogota to Ibague, and from Facatativa to La Dorada, on the Magdalena River.

Raymond Concrete Pile Company of South America, 951 kilometers, from Buenaventura, on the Pacific Coast, to Cali, and north through Cartago, Anserma and Medellin to Taraza. Also from Anserma to Manizales.

The Utah-Olap Construction Company, 400 kilometers, from Ibague to Armenia, from Armenia to Murillo, from Cartago to Manizales, and from Manizales to Honda.

Winston Incorporated, 577 kilometers, from Taraza (north to Medellin) to Cartagena, and the coast route from Cartagena to Barranquilla.

The highway and bridge work reported in ENR July 30, 1953, p. 40, as being done by the Nathan A. Moore Co. and the American Bridge Co., is not part of this program. It involves an additional 100 miles of highway widening and resurfacing, also three suspension bridges.

• **Slides a major problem**—The greatest problem which has been encountered in the project is that of slides. Unlike most of the mountain areas in the United States, the Colombian Andes are almost completely covered with a deep overlay of soil, even on the highest and steepest passes. Most of the mountain roads which are included in the program had been well located at the time of the original construction, and plans for reconstruction usually provided for the widening of the existing roads. In only a few instances was a more practicable route discovered.

Many of the existing roads were only four to five meters in width in the difficult sections. A roadway of this width, on mountain slopes, could be constructed with a minimum of excavation. To widen the existing grade to seven or eight meters re-

(*Continued on page 35*)

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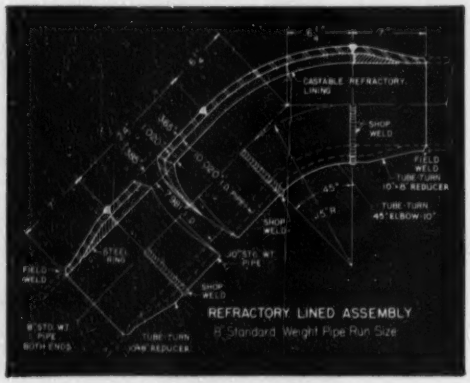

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quired heavy excavation into the side of the mountain, with steep, unstable slopes. To provide an adequate slope to the side-hill cuts would be impracticable, and sometimes almost impossible, with the slopes continuing steeply upward for thousands of feet.

The old roads frequently were closed by slides, and the new grades are many times more susceptible to this action. Contractors have moved hundreds of thousands of cubic meters of material from grades which had previously been completed to a standard section. This problem will continue for years after the contractors have completed their work, and adequate provisions will have to be made in future highway budgets to take care of this situation. It represents a serious problem for the future maintenance program.

Another problem which has been encountered on many of the projects is the serious lack of satisfactory sources of aggregate, in certain areas. Even in the mountains, where good aggregate might be expected in abundance, it frequently is necessary to haul this material for long distances, because of the absence of satisfactory sources. On one mountain road, the contractor is hauling crushed stone for the base course for a maximum distance of 35 miles. On another project, on the coastal plain, aggregate sources are so scattered that the hauling distance is as much as 60 miles.

Although much of the aggregate is sound, and completely satisfactory, there are some sources which yield a less satisfactory material, which must be used with care. In the bituminous paving program, some aggregates have been found to be subject to stripping, and additives have to be imported to remedy this situation.

Estimated quantities in all contracts

	Cubic meters
Excavation (unclassified)	13,700,000
Structural concrete	22,100
Retaining walls (concrete and rubble)	102,600
	Square meters
Aggregate base course	21,400,000
Bituminous pavement	
Surface treatment	5,950,000
Road-mix	2,660,000
Penetration macadam	5,480,000
Asphaltic concrete	1,930,000
Resurfacing	640,000
Total pavement	**16,660,000**

• **Weather also causes trouble**—In almost all sections of Colombia, the seasons vary from extremes of heavy rains to extended periods without rainfall. This produces a condition which makes untreated aggregate surfaces almost impossible to maintain in good condition. In the dry seasons, the binding material in the surface courses is removed by the action of traffic. In the wet seasons the surface material is eroded, and the surface and even some of the base material is lost. This situation is particularly bad on steep mountain grades.

Another factor which must be considered is the high cost of aggregate in some areas. As a result of these considerations, it was decided to include in the program for construction a large amount of bituminous pavements and surface treatments, even on roads where the present traffic volumes ordinarily would not be considered to justify this work.

WIDENING WORK where the highway cuts through the central range of the Cordilleras at El. 11,000 near Armenia.

• **Various types of paving**—The bituminous paving program, consisting of approximately 2,300 kilometers of pavement, includes several types and standards of construction. Two hundred sixty kilometers of hot-mix asphalt, 3-in. thick, is to be placed on an aggregate base. Other types include 4-in. penetration pavements; road-mix, using a travel-plant; and various types of surface treatments. An attempt has been made to design the bituminous pavements to make the maximum use of local aggregates.

Soil conditions have been studied, and pavement designs have been correlated with this factor. Traffic loads also have been considered, but this factor is difficult to predict in Colombia, because of the absence of adequate data for previous periods of traffic.

There is a relatively large amount of cut-back asphalt (RC's) produced by the refineries in Colombia, but a large proportion of the supply is used by cities and private industry, leaving an insufficient amount for use on the national highways.

In the present paving program, it is necessary to import more than half of the bituminous material. Since it is more practicable to import solid asphalt, this situation tends to encourage the use of more solid asphalt in the design of pavements in this program. However, it is planned to import a large amount of MC and RC asphalt for use in surface treatments in the northern part of the country.

• **Highway overloading common**—Heavy transport trucks constitute a relatively large part of the traffic using the national highways in Colombia. Load restrictions have never been enforced, and overloading is common. There are many evidences of severe damage to pavements and to untreated surfaces by overloaded vehicles.

(*Continued on page 36*)

It is planned to begin enforcement of loading restrictions, based upon standards which have been established in the United States, in order to protect the investment which is being made in this large paving program.

Highway maintenance has always been a problem in Colombia. In attempting to extend the number of kilometers of roads which would be open to traffic throughout most seasons of the year, in accordance with the demands of the public, highway funds have never been adequate to provide protection to the investments which have been made in new construction from year to year.

Many important roads were closed to traffic by slides, washouts, or by the neglect of routine maintenance operations. A few bituminous pavements were allowed to revert to aggregate surfaces.

During the past few years this situation has been improved to some extent. A better maintenance organization was developed, with regular maintenance personnel established in each of 20 zones. However, funds have not been adequate, and much of the work and funds of the Maintenance Division have been diverted to reconstruction. Actual routine maintenance operations have never been made an important part of the work of the division.

In the new program for maintenance, recently adopted by the Ministry of Public Works, certain funds will be set aside annually for each item of highway maintenance. Routine maintenance operations will be provided with fixed funds, and will be protected from diversion to reconstruction and even to work of minor improvements.

An equipment fund also will be established, which will insure the purchase of adequate maintenance equipment, and will provide for the maintenance and replacement of equipment. The Maintenance Division will provide the present 20 zone headquarters with permanent shops, completely equipped to an established standard. A few foreign engineers will be brought into the country for a limited time, to help establish this program. Trained personnel from the five contracts now in operation eventually will become available to help in this expanded work.

The International Bank is participating to the extent of allocating a small part of the second loan to the initial purchase of badly needed maintenance equipment, and for shop equipment. It is believed that the new plans for highway maintenance will insure the protection of the huge investment which is being made in the highway system, and gradually will bring about better traffic service for highway users in Colombia.

Good highway transportation is one of the primary needs for any rapidly developing country. Colombia has recognized this fact, and in spite of the serious obstacle of three tremendous mountain ranges, covering a large proportion of her populated area, has undertaken and is successfully completing an expensive highway program. This investment will insure her continued development towards becoming one of the most prosperous and important nations in the Western Hemisphere.

• **Tolls considered**—When this highway improvement program was being planned, the application of tolls to some sections was considered. Two sections where toll collection appeared practicable were on the 24km of new location north of Cali and the entire north end from Cartagena to Barranquilla. On the Cali end the contractor had erected toll booths when the author left Colombia in January, but as the highway had not been paved, no tolls were being collected.

The toll highway project reported as being opened in Colombia between Bogota and Cali (ENR Feb. 18, p. 206) is not part of the work financed by the International Bank for Reconstruction and Development.

When this highway program was started, Jorge Leyva was Minister of Public Works, Alfonso Duque was Secretary General and Alberto Calderon was Chief Engineer of Design. Since June, 1953, the work has been under the direction of Santiago Trujillo, Minister of Public Works; Humberto Avila, Director of Highways, and Jorge Alvarado, Chief Engineer of Design. Santiago Alvarez is Chief Engineer of Maintenance.

Federal agencies agree on allocations of costs for multiple-purpose projects

Agreement on how costs of multiple-purpose river-development projects are to be allocated has been reached by the three principal agencies interested in that type of work—the Department of the Interior, the Corps of Engineers, and the Federal Power Commission. The approved procedures are essentially the same as those recommended in 1950 by a joint committee made up of representatives of these three agencies plus representatives of the Departments of Agriculture and Commerce.

The three agencies have agreed that, as a minimum, each purpose or function should be charged with the cost added solely because of its inclusion in the multiple-purpose projects. It was agreed also that the legislative background and justifying reports of authorized projects should be considered in making allocations among flood-control, navigation, power, irrigation, water-supply and recreation. Further, it was agreed that each purpose will share equitably in the reduced cost resulting from the joint development.

Three possible methods for allocating costs were set forth in detail in the memorandum of agreement. They are the "Separable Costs-Remaining Benefits Method", the Alternate Justifiable Expenditure Method" and the "Use of Facilities Method".

The first method is considered preferable. The second is acceptable where basic data to determine the separable costs are not available and the expense of obtaining them is not justified. Where the use of facilities is clearly determinable on a comparable basis the third method is acceptable if its use is consistent with the act authorizing the project.

The favored "Separable Costs-Remaining Benefits Method" has the following steps:

(1) The benefits of each purpose are estimated.

(2) The alternate costs of single-purpose projects to obtain the same benefits are estimated.

(3) The separable cost of each purpose is estimated.

(4) The separable cost of each purpose in the multiple-purpose project is deducted from the lesser of each purpose's benefit or alternate cost. The lesser figure is used since alternate cost is used in this method only if it represents a justifiable expenditure, that is, if it does not exceed the benefits.

(5) From total cost of project deduct all separable costs to determine residual costs.

(6) Residual costs, designated as joint costs in this method, are distributed in direct proportion to the remainders found in step 4.

(7) To determine the cost allocated to each purpose, add the separable and distributed costs for each purpose and, in the case of power, subtract from that sum the amount of taxes foregone which was used in computing power costs under steps 2 and 3 above.

Copies of the complete statement titled "Cost Allocation" and dated March 12, 1954, may be obtained from Information Service, Department of the Interior, Washington 25, D. C.

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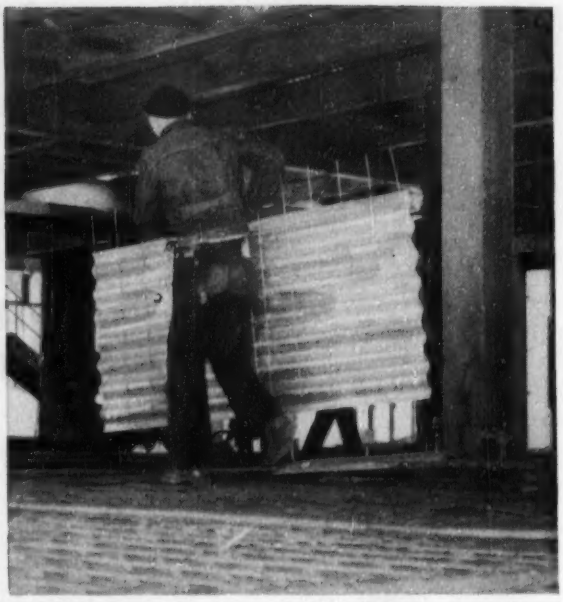


METAL DECKING was welded to beams of 20-story Denver Club Building to serve as form and reinforcing for concrete floors.

Floors go in fast with multi-purpose forms

Concrete floors of Denver skyscraper retain their steel forms as reinforcing—exterior walls incorporate aluminum sandwich panels and precast concrete

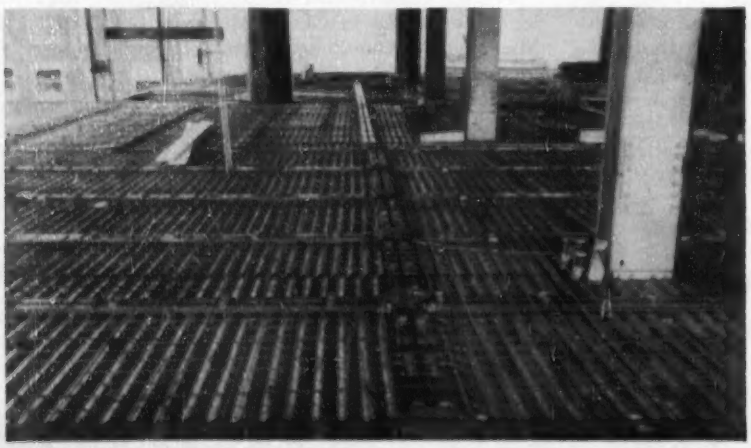
Corrugated steel decking saved both time and labor in constructing concrete floors for a steel-framed skyscraper in Denver, Colo. The lightgage metal served both as forms and reinforcing for the concrete, and in addition provided a working deck for the various trades before the floors were completed.

The air-conditioned structure, known as the Denver Club Building, is 20 stories high, with a penthouse on top. The first 16 floors are being leased as general office space. The top three floors are reserved for the Denver Club, an organization of the city's business and social leaders. Construction is scheduled to be finished late in October.

In plan, the building is 125 ft square, with structural steel columns spaced 25 ft c-c. Steel beams subdivide the square bays thus formed into three equal panels.

• **Lightweight floors**—These beams support a reinforced concrete floor slab 4½ in. thick, designed for a total uniform load of 115 psf (50-psf live load, 20-psf partition load and 10-psf ceiling load, plus weight of slab). Made with expanded-clay aggregate, the concrete weighs only 90 lb per cu ft. The mix contained 564 lb of cement, 1,895 lb (31.8 cu ft) of aggregate, 53 gal of water and 1.5 lb of a cement-dispersing agent per cubic yard of concrete. Slump was 1.5 in., and air entrainment, 6.5%.

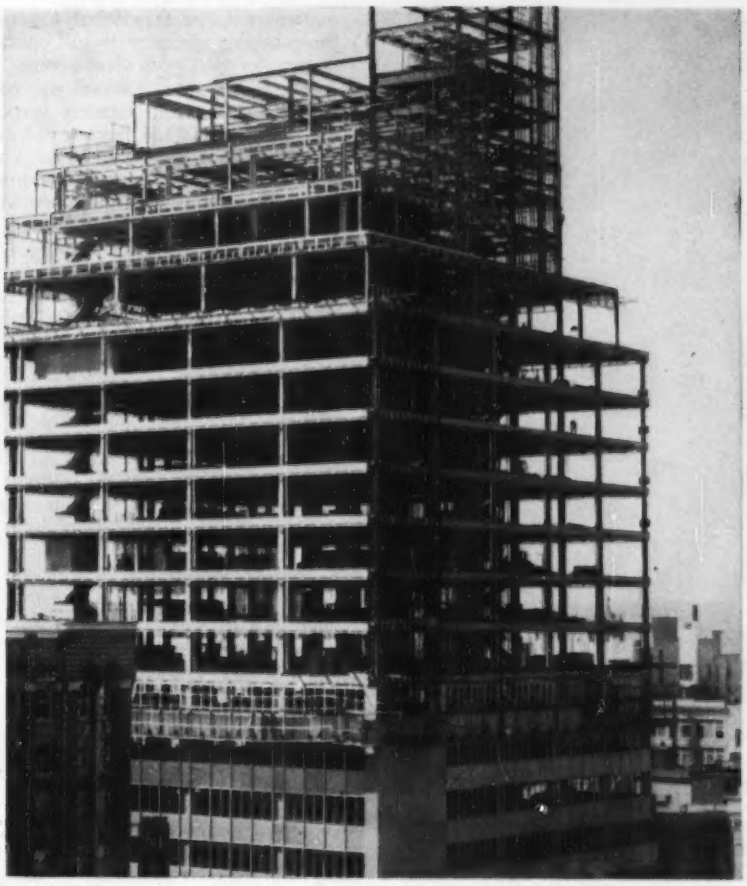
Use of lightweight concrete for the floors, and lightweight vermiculite plaster for ceilings and fireproofing, instead of stone concrete, enabled savings to be made in the riveted steel frame and in foundation construction, because of the reduced weight. Savings in foundation costs, in particular, were substantial, since the building is founded on caissons extending 40 ft below street level to shale (Denver formation). The piers are 36 to 54 in. in diameter, except at the bottom, where they are belled out for increased bearing.



READY FOR CONCRETE, the metal form supports electrical duct that will be wholly contained within the thin structural slab.

• **Triple-duty form**—The method used for constructing the floors was chosen by designers after extensive comparative studies. It called for use of metal decking that would serve initially as a working platform, then as forms for the concrete and finally could be left in place permanently to act as reinforcing.

The decking, weighing 2 psf, was brought to the job in 2½-ft widths. Lengths were sufficient to span be-



STEEL FRAME of the Denver building will be enclosed with heat-absorbing glass, aluminum spandrels and precast concrete panels on street sides, brick in the rear.

tween top flanges of beams and bear 2 in. at each end.

Galvanized with 1¼ oz of zinc per sq ft, to insure permanence, the steel had been cold worked prior to corrugation to obtain a yield strength exceeding 80,000 psi. This high strength is intended to allow the units to withstand a far greater amount of abuse during construction than is usually expected of light-gage metal. Also, steel wires had been welded in the factory across the corrugations, which run lengthwise in the units.

With concrete in place on the decking, the corrugated steel becomes the positive reinforcing for the slab. The transverse wires transfer horizontal shear from the concrete to the light-gage metal, and in addition, serve as temperature reinforcing.

For continuity of the slab, reinforcing bars were placed near the top surface of the concrete over beams, to resist negative bending moment. A suspended ceiling of 1-in.-thick vermiculite plaster under the decking enables this floor construction to obtain a 4-hour fire-resistance rating.

• **Temporary supports**—Installation of the light-gage units followed close behind steel erection. They were set on temporary supports and the ends welded to the steel beams at 1-ft. intervals. In each panel, temporary support consisted of a wood ledger at midspan, which in turn rested on wood stringers spanning between bottom flanges of the steel beams.

With the deck in place as a working platform and protective cover for floors below, piping and underfloor electrical and telephone systems were installed. A two-duct system of raceways and junction boxes, on an average spacing of 6 ft, is entirely contained within the 4½-in.-thick structural slab.

Concrete was placed as soon as possible. When it had attained sufficient strength, usually in about one week, the metal decking's temporary supports were removed and re-used for the upper floors.

• **Labor saved**—The owner's resident engineer, E. E. Stansbery, reports that an eight-man crew—six ironworkers and two carpenters—installed the metal decking for each of the 20 floors in 1½ days. With ordinary wood forms, 50 carpenters would have been needed to do the job in the same time, he estimates.

Floors for the first 16 stories—the areas to be rented for offices—are finished with asphalt tile; Denver Club floors are topped with wood. Lobby and elevator foyers have terrazzo floors.

• **Uncommon exterior**—On two street sides, the building exterior, above the first floor consists of large windows with aluminum sash and aluminum spandrel panels. The spandrel panels contain 1½ in. of glass-fiber insulation and an aluminum-foil vapor seal. Parts of the wall are also covered with precast concrete panels, colored pastel green and resembling terrazzo. The panels, 5 ft square and 2 in. thick, form a vertical strip 25 ft wide on one side of the building, from the 2nd to the 17th floor. Another strip, 5 ft high, runs horizontally along the same side of the building at second-floor level. These panels also form the facing for a 6-story tower above the 17th floor.

On the rear and alley sides, the building exterior consists of brick and windows with steel sash.

All windows are glazed with green-tinted heat-absorbing glass. Normally kept closed, they fold outward to permit cleaning from the inside.

The building will be air-conditioned with a two-zone system. A high-velocity system will be used for the exterior zone, with small-diameter risers along the steel columns to serve under-window units. Conventional ducts discharging through diffusers will serve the interior zone.

• **Operatorless elevators**—Vertical transportation for office areas will be provided by six operatorless elevators. The group will be controlled by an electronic supervisory system that places cars in position automatically to handle changes in traffic throughout the day (ENR May 7, 1953, p. 32).

A seventh elevator, for club members, will operate between the 17th and 20th floors. And an eighth elevator will serve the penthouse on the 23d floor.

The skyscraper is being built by John D. and Clint Murchison, Jr. Ervin and Berne, of Denver, are the architects, and Technic Engineering Co., of Dallas, the engineers. Mean & Mount Construction Co., of Denver, is the general contractor.

The metal decking that served as forms and reinforcing is manufactured by the Granco Steel Products Co. The Universal Corp., of Dallas, installed the aluminum spandrel panels, while Otto Buehner & Co., of Salt Lake City, produced the precast concrete panels. Otis Elevator Co. will install the automatic elevators.

INDUSTRIAL WASTE PLANT will remove grit in chambers at upper left, then pump flow to clarifiers; sludge goes to triangular lagoons in river bend.

Plant to clean up Ford's steel wastes

Grit, sludge and oils from mammoth Rouge plant to be kept out of River Rouge

Measured by automobiles, steel operations, dollars or what-have-you, Ford Motor Company's 1,200-acre Rouge plant in Dearborn, Mich., is big.

Its water use is big. The plant takes 400 mgd of mill water, on the average, out of the Detroit River. Pump capacity is 900 mgd. And of the daily take, about 80 mgd are used in Rouge plant's steel-making area—meaning a big industrial waste problem from this operation.

As part of a long-range remedial and preventive industrial waste disposal project, Ford's plant engineering office is now supervising the design and construction of a $1-million waste treatment plant situated not far from the plant's famous Rotunda and immediately west of Schaefer Road. It is to be completed in November.

The plant will remove impurities from liquid waste of Ford's slab and blooming mills and other steel-making operations located in the western section of the Rouge plant. At present, about 80 mgd flows from the area through an 8-ft sewer emptying into the River Rouge.

This flow will be intercepted and channeled into the two grit chambers of the new treatment works. The new waste treatment plant is intended only for dry weather flow and the sewer will function as a gravity outlet during storms.

The grit removal unit consists of two chambers, each 9 ft 6 in. wide by 60 ft long with a 7-ft water depth. At 125 cfs, flow will have a velocity of 1 fps and will be retained for one minute.

The grit chamber will protect two pumps from particles of scale or other solids carried in the sewer. Each channel will be equipped with hand-raked bar screen having 3-in. clear openings. Solids will be removed by clam bucket after the channel is dewatered. Coarse, drainable solids will create no nuisance and can be handled by truck to a place of disposal.

• **Plant divided**—Flow from the grit chamber must be pumped about 1,000 ft to two clarifiers. There is not enough land area at the sewer for clarifiers, sludge lagoons, etc., and the sewer itself could not be extended downriver 1,000 ft without lowering the pumping station into soil unsatisfactory for that type of structure.

The pumping station unit will consist of two variable capacity vertical type pumps rated 125 cfs at 16-ft head, driven by two 350-hp motors. One pump will be able to handle normal flow. The pumps will discharge into a 66-in. force main to the clarifiers.

After being pumped approximately 1,000 ft and raised 11 ft, the flow will be divided equally between two circular clarifiers, each measuring 110 ft in diameter, with a 10 ft 5 in. side water depth. Retention time of the water in the clarifiers will be 30 minutes for 62.5 cfs, or 40.5 mgd. Clear water will be withdrawn below the surface as it encounters a scum baffle located ahead of the weir which is continuous around the circumference of the clarifiers. Overflow rate will be 117,500 gal per ft per day or 82 gpm per ft of weir.

These units will be of the center underfeed type with diffuser inlets. Settled sludge willl be collected and pumped into sludge lagoons.

• **Oil skimmed**—Rotating arms will move surface oil to a split-pipe skimmer. Oil will be removed from the skimmer to a concrete oil sump by a flight conveyor. Two bucket elevators will take thickened oil up to an overhead steam-heated tank. Steam heating will thin oil congealing during winter months. The oil will be discharged from the overhead tank to trucks, which will remove it to salvage storage tanks for later repurification.

Sludge from clarifiers will be pumped through 6-in. sludge lines to one of two lagoons, each having a capacity of 5,600 cu yd or 1,120,000 gal. After excess water has drained off and sludge has consolidated, the ponds will be cleaned by dragline, and sludge will be trucked to a point of disposal.

Clarified water will discharge into the River Rouge. Three tide gates prevent river water from entering the sewer outlet. In the event of a power failure, which would stop the pumps, backwater tide gates prevent water from backing up and flooding plant areas. The functional design of the backwater chamber is based on original model studies of backwater chambers made by Hubbell Roth & Clark, Inc.

• **Construction credits**—General direction: Industrial Waste Committee, Ford Motor Co., J. A. MacAlarney, director, plant engineering office, chairman; Frank Kallin, project engineer; Hubbell Roth & Clark, Inc., consulting engineers; Commercial Contracting Corp., the general construction contractor.

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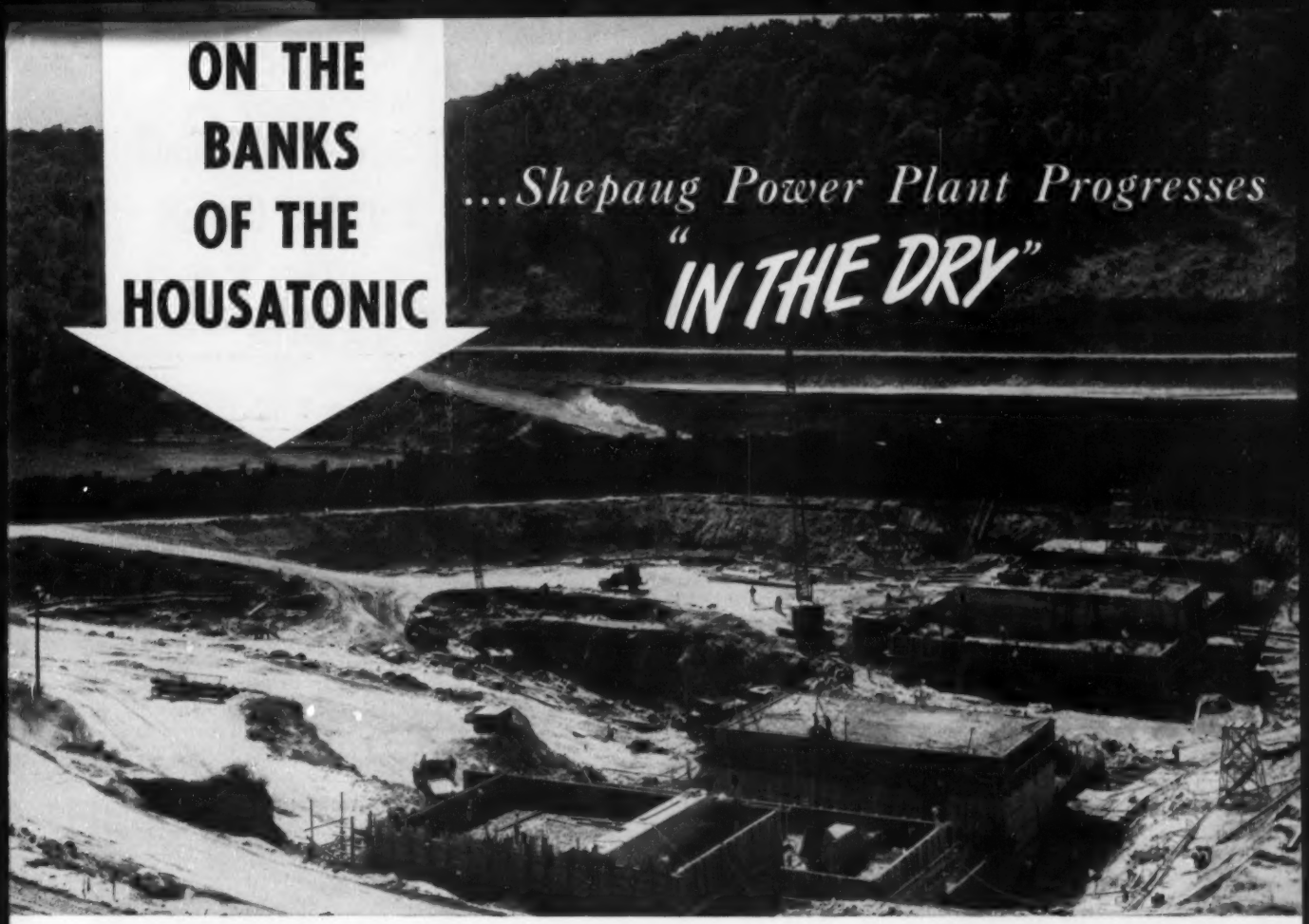

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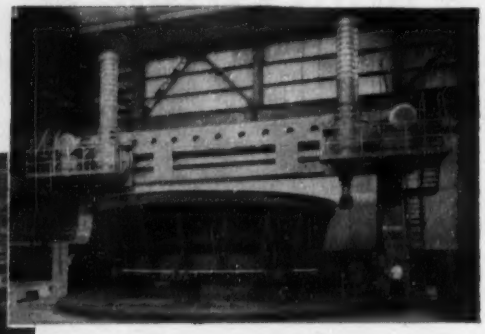
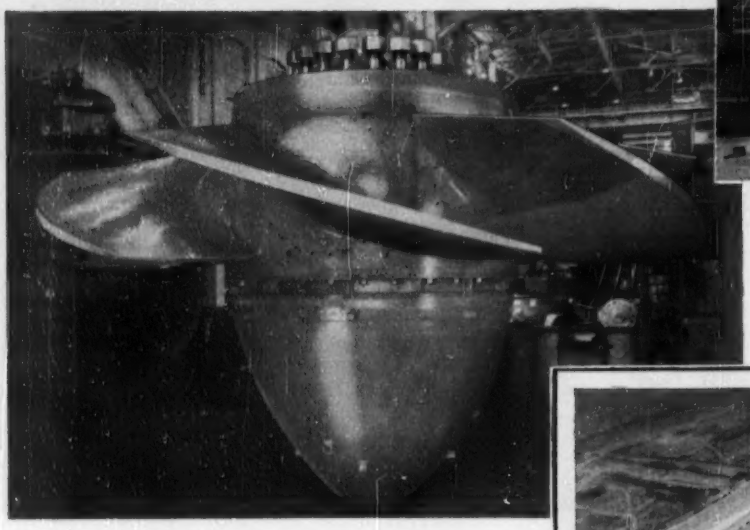
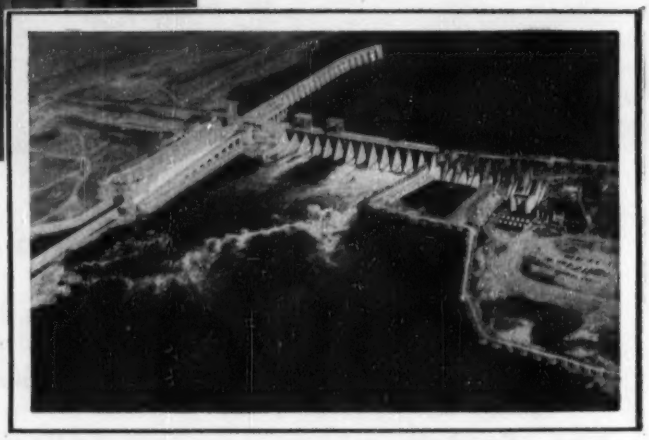


Discharge ring for one of the McNary units on a 40 ft. vertical boring mill in the Smith Shops.



SMITH-KAPLAN 280 in. diameter runner assembly weighing 147 tons.



Aerial view showing construction of McNary Dam, a U. S. Engineers Project, on the Columbia River. Navigation locks are at left and the powerhouse site is at the right.

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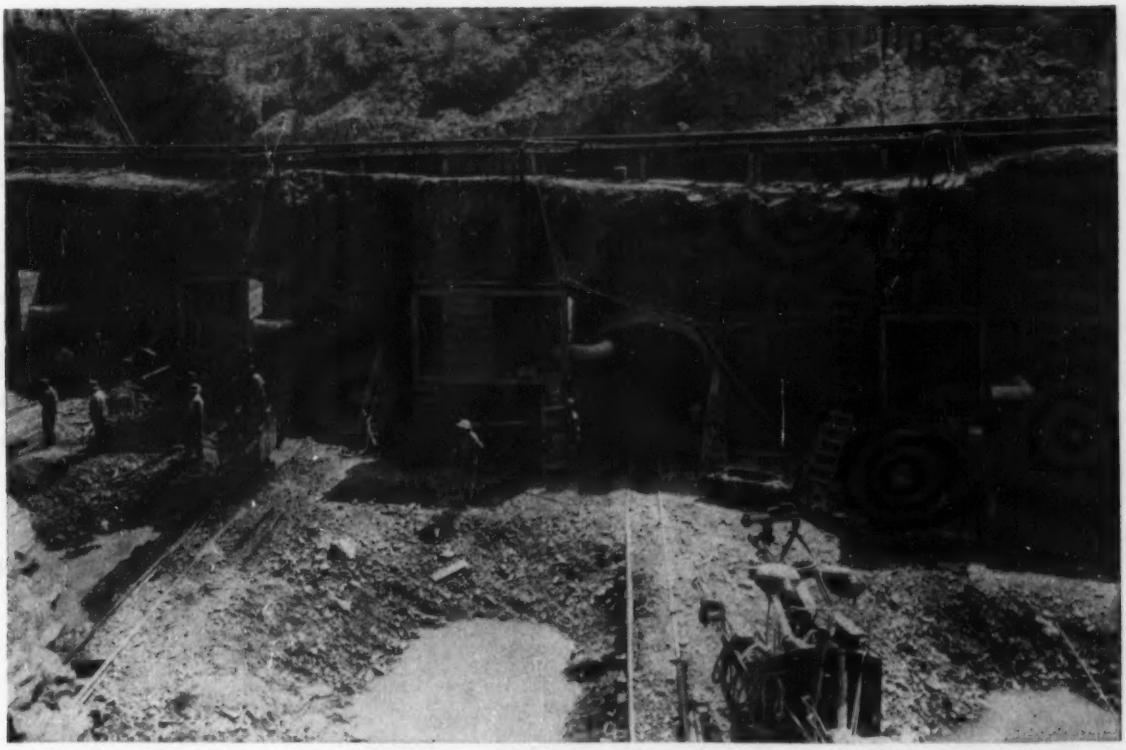

FOUR TUNNELS AT ONCE went into shale at the intake canal to carry cooling water to steam-power units.

Fast driving, low unit costs on condensing water tunnels

TVA tunnelers at John Sevier Steam Plant rack up high driving scores and low prices

George K. Leonard
Chief Construction Engineer
Tennessee Valley Authority

Excellent driving and cost records were made and some unique methods and equipment recently were used during the driving in rock of some 4,800 ft of intake and discharge condensing water tunnels at the six-unit, 1,200,000-kw John Sevier steam-electric station. The station, begun by the Tennessee Valley Authority in October, 1952, is located near Rogersville, Tenn., on the left bank of the Holston River at the upper end of the reservoir formed by Cherokee Dam. (See "TVA dam builders turn to steam", ENR Feb. 25, p. 30 .)

The site offers good characteristics for low construction and operating costs. Of primary importance are its favorable position with respect to power loads in the east Tennessee area and the existing power transmission network; its proximity to a satisfactory source of coal in east Kentucky and southwest Virginia; and sufficient condensing water for a six-unit plant of 1,200,000-kw capability.

The condensing water system is of special interest. The water surface of the intake channel is a few feet higher than the level of the discharge channel. As the head loss during normal operating conditions amounts to about 18 ft, which loss is essentially concentrated at the condenser, pumps are used to propel the water through the system. The average low flow in the river is sufficient to furnish condensing water for six units; however, the presence of hydroelectric plants a short distance upstream from the steam plant makes the flow irregular, as the hydroelectric plants are used for peaking purposes. To equalize the flow, it was necessary to construct a 976-ft long dam across the river to store water discharge during peaking operations to have it available for condensing purposes when the inflow is low. An excavated channel above the dam leads the water into the intake, and a similar channel below the dam conveys the water back to the river. The architect's rendering shows the location of the structures around the powerhouse.

From the intake channel, the cool water passes through the intake structure with its traveling screens, gates, and pumps into the 655-ft long intake tunnels which lead to the condensers. Past the condensers, 531-ft long discharge tunnels convey the warm water to the discharge channel which empties into the river below the diversion dam, thus preventing the warm condensing water from mixing with the cool water in the intake channel. While design of the water system was not dictated by the topography and geology of the site, it was influenced and made attractive by these features.

The rock formation at the plant site consists of Athens shale with thin interbedded layers of limestone with only localized folding and faulting. It is overlaid with a cantle of terrace and alluvial deposit. This formation placed the excavation for the intake and discharge canals and about one-half of the powerhouse substructure in the overburden, provided an excellent powerhouse foundation in rock, and permitted the use of tunnels instead of cut and cover conduits for carrying the water through the powerhouse.

The 9½-ft diameter tunnels (8-ft lined diameter) were driven entirely with air tools. Purchased originally for a similar layout at the Colbert Steam

(*Continued on page 45*)

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Plant, the equipment has now served three jobs totaling 12,650 ft of tunnel length. It has been entirely satisfactory for short, small-bore driving. The air-operated equipment included two drill jumbos, each with three wet-type 48-in. shell drifter drills; two 8-hp locomotives, and two muck loaders. Although only one of each of the above pieces was used at a time, the other served as a spare, thus reducing lost repair time and considerable moving between tunnels.

• **Men and equipment**—Reversible 4,700-cfm blowers were used. The blower pipe was 15 in., the air line 4 in., and the water line 2 in. in diameter. Air at 150 psi came from the job's central plant where 5,000 cfm were available. The air line was carried into the tunnel just behind the heading. Connections were available for the drill jumbo, mucking machine and locomotive. Muck cars were 54-cu ft rocker side dump. The track was 24-in. gage with 30-lb. rail.

The typical tunnel crew was the same for each 8-hr shift and included the following at the indicated hourly wages:

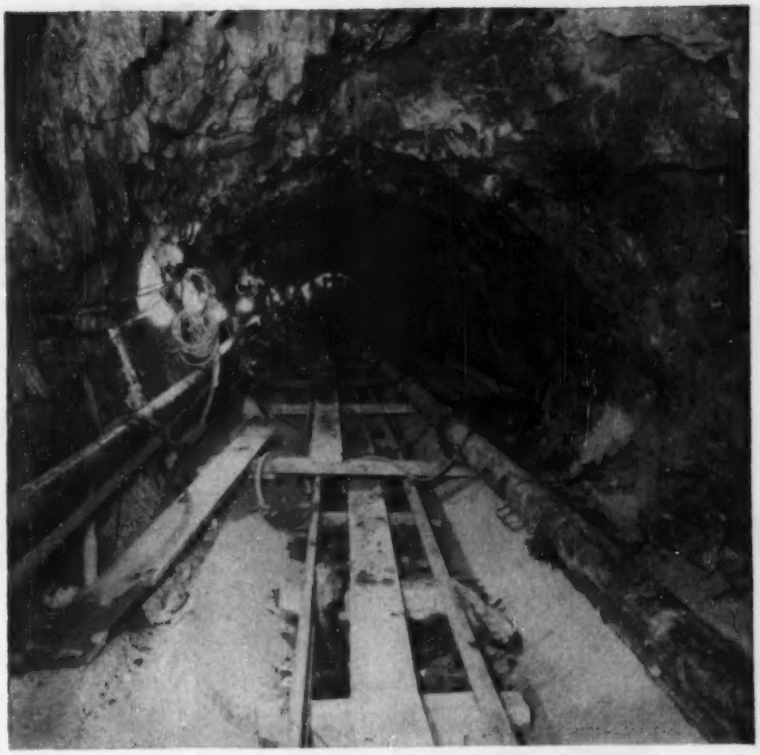
1 shifter	$2.40
5 miners	2.15
4 chuck tenders	1.85
1 locomotive operator	1.95
1 mucking machine operator	2.60
1 crane operator	2.60
1 crane oiler	1.85
1 iron worker	2.65
1 electrician	$2.775
1 pipefitter	2.775
1 mechanic	2.60
2 labor foremen	2.20
8 laborers	1.70
1 pump operator	1.65
1 powderman	1.95

Carpenters, at $2.375 an hour, were used when timbering was required; and truck drivers, at $1.95 an hour, were used for hauling muck from the crane. The general tunnel superintendent received $3.60 an hour.

• **The method**—The standard round contained 31 drill holes, 8 ft deep, loaded with 105 lb of 40% dynamite, and fired with electric exploders in nine delays. Powder consumption was 15 lb per ft of tunnel, or about 5.7 lb per cu yd based on the 9½-ft design diameter. Overbreak was 58.3%.

After a round had been drilled and fired, the roof and walls were washed down and scaled. Then muck was hauled to the portal and dumped into a muck pit from which it was clammed with a crawler crane to trucks which hauled it to the canals where it was used for riprap. The tunnel tights (tight spots, under bore-size) were removed, and the invert was cleaned by

(*Continued on page 46*)



DISCHARGE TUNNEL NO. 3 looking upstream, with invert completed, concrete pipe in place and track laid for liner forms.

Driving record

	Intake		Discharge	
	Total	Best Week	Total	Best Week
Tunnel advance—lineal ft	2,610	**320**	2,136	**257**
Shifts worked—number	154	**15**	208	**15**
Tunnel per shift—lineal ft	16.9	**21.3**	10.3	**17.1**
Rounds shot—number	381	**47**	312	**35**
Excavation—cu yd	10,921	**1,063**	8,820	**900**
Tunnel per round—lineal ft	6.8	**7.8**	6.8	**7.8**
Operating delay—hours	50	**5.5**	121	**12**

Unit costs of tunnel sections

(Showing variation in costs with number of tunnels driven at one time)

	Four intake tunnels all driven at same time		Four discharge tunnels three tunnels at one time, one separately	
	Per cu yd	Per lf	Per cu yd	Per lf
Drilling	$2.33	$9.77	$2.94	$12.14
Blasting	1.76	7.38	1.95	8.06
Mucking and hauling	3.15	13.18	4.31	17.77
Loading and disposal	2.86	11.96	3.89	16.09
Final scaling and clean-up	2.07	8.67	2.72	11.22
Timbering	1.25	5.22	2.43	10.06
Track, pipe lines, equipment moving	0.96	4.00	1.98	8.16
Pumping	0.61	2.55	1.06	4.37
Project plant, pro-rated (6%)	0.90	3.76	1.27	5.27
Total	**$15.89**	**$66.49**	**$22.55**	**$93.14**

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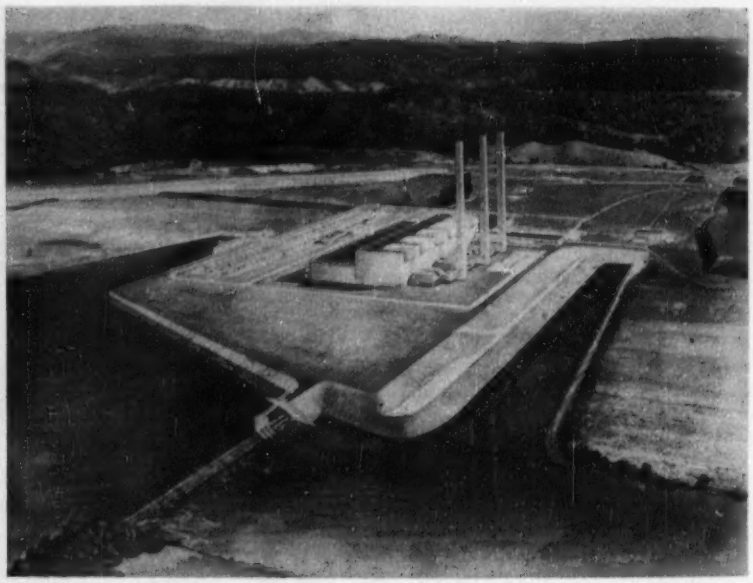


COMPLETED PLANT as it will look will show little evidence of four complete tunnels beneath it. Intake canal is at left, discharge at right. Dam on Holston River assures adequate cooling water.

a small tractor with bulldozer blade and a crew of laborers. The portal area was too small to connect the tracks between tunnels, so the drill jumbo, mucking machine, locomotive and dump cars were moved between portals by crane.

• **The progress**—Since only one string of tunnel equipment was available, it is obvious that economical production required operations in more than one tunnel at the same time, thus permitting the continuous use of the equipment. Maximum progress was obtained when four headings were available at one time, as was the case while driving the intake tunnels. This work required about ten weeks, and the weekly average was 257 ft. A record of 320 ft was made here in one week. In three shifts the drill jumbo and mucking crews finished driving eight or nine rounds including all necessary timbering, track work and scaling.

Only three headings were open at one time on the discharge side, and here the weekly average advance was 162 ft. The fourth discharge tunnel, having been authorized quite late, was driven alone and averaged 148 ft per week. Timbering in the four intake tunnels totaled 276 ft, in the first three discharge tunnels 339 ft, and in the last tunnel 36 ft. Driving progress naturally was retarded during timbering operations.

Driving records are shown in one accompanying table; costs are shown in the other.

For the entire job, the cost of driving was $18.86 per cu yd and $78.49 per linear ft. It is only fair to note that ground conditions were less favorable on the discharge side. More water was encountered, and three times as much lumber was placed in the timbering. In addition, the tunnel men got their training in the discharge tunnels for the exceptionally fast driving in the intake side.

C. E. Blee is chief engineer of the Tennessee Valley Authority, R. A. Monroe is chief design engineer, and the writer is chief construction engineer. At the John Sevier project, Hendon R. Johnston is project manager, William Aydelott is construction engineer, and H. Daniel Towers is construction superintendent. Berlin C. Pruett was in direct charge of the tunnel work.

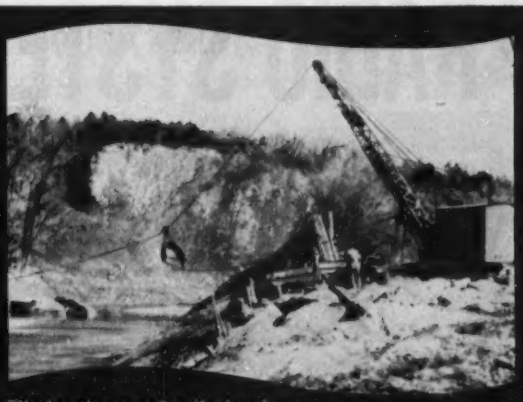
New Boston Transit line appeals to auto owners

Boston's Metropolitan Transit Authority took a bold step forward recently when it constructed a 2¼-mi, $3-million extension to its East Boston electric train service from Orient Heights to the Revere Beach front.

Major objective is to furnish the motor car commuter with a fast and inexpensive way into the Bay State capital from the north shore area.

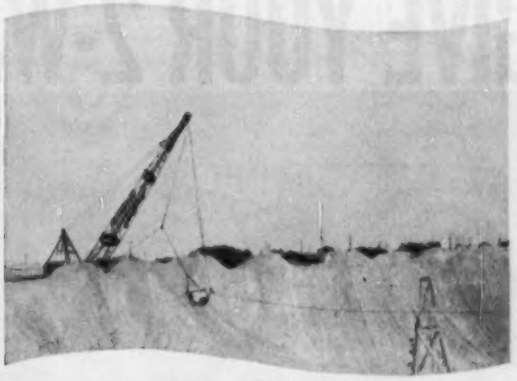
Basic scheme is to provide 25-cents-per-day parking at lots adjacent to transit stations, with a round-trip fare of 36 cents to all parts of the Boston system.

The summer resort facilities at Revere Beach have now been brought to within 19 minutes from the heart of Boston by the extension.



Eliminating an 8 mile haul

Though far beyond the normal reach of his crane, a Sauerman Track Cable Scraper arrangement enabled this contractor to recover gravel from a convenient deposit. The alternative to this would involve an 8 mile truck haul from the nearest existing pit.

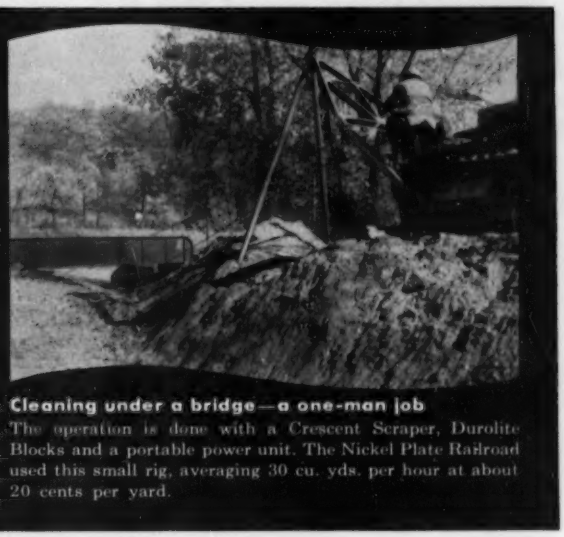


Cutting side banks to a finished grade

This pendant rig enabled the operator not only to work the full 260-ft. span, but permitted such fine control that he was able to trim the banks to a 1 to 1 slope. A total of 26,000 cu. yds. of earth were removed.

Overcoming the hazards of ice and current

Midwestern contractors laid this pipe in the current of the frozen Rock River. They used a ¾-cu. yd. Crescent Scraper, cutting a straight trench on a 700 ft. span. Depth of cut was controlled by a short length of cable attached to Crescent and track cable trolley.



Cleaning under a bridge—a one-man job

The operation is done with a Crescent Scraper, Durolite Blocks and a portable power unit. The Nickel Plate Railroad used this small rig, averaging 30 cu. yds. per hour at about 20 cents per yard.

500 feet of culvert cleaned at an $800 savings

Culvert cleaning had been a hand-shoveling job until this tractor-Crescent combination was employed. This efficient labor saving arrangement grew out of someone's idea of floating or pushing a cable through the culvert, anchoring a tailblock on the other side and removing the silt and debris with a Crescent.

Digging a lake

When Keeler Construction Co. dug this Connecticut lake they used a ½-cu. yd. Crescent operated from a crane to distribute spoil among the fronting trees. Despite the limitations involved in spreading the material, the Crescent moved 500 to 700 cu. yds. per day at only 12 cents per yard.

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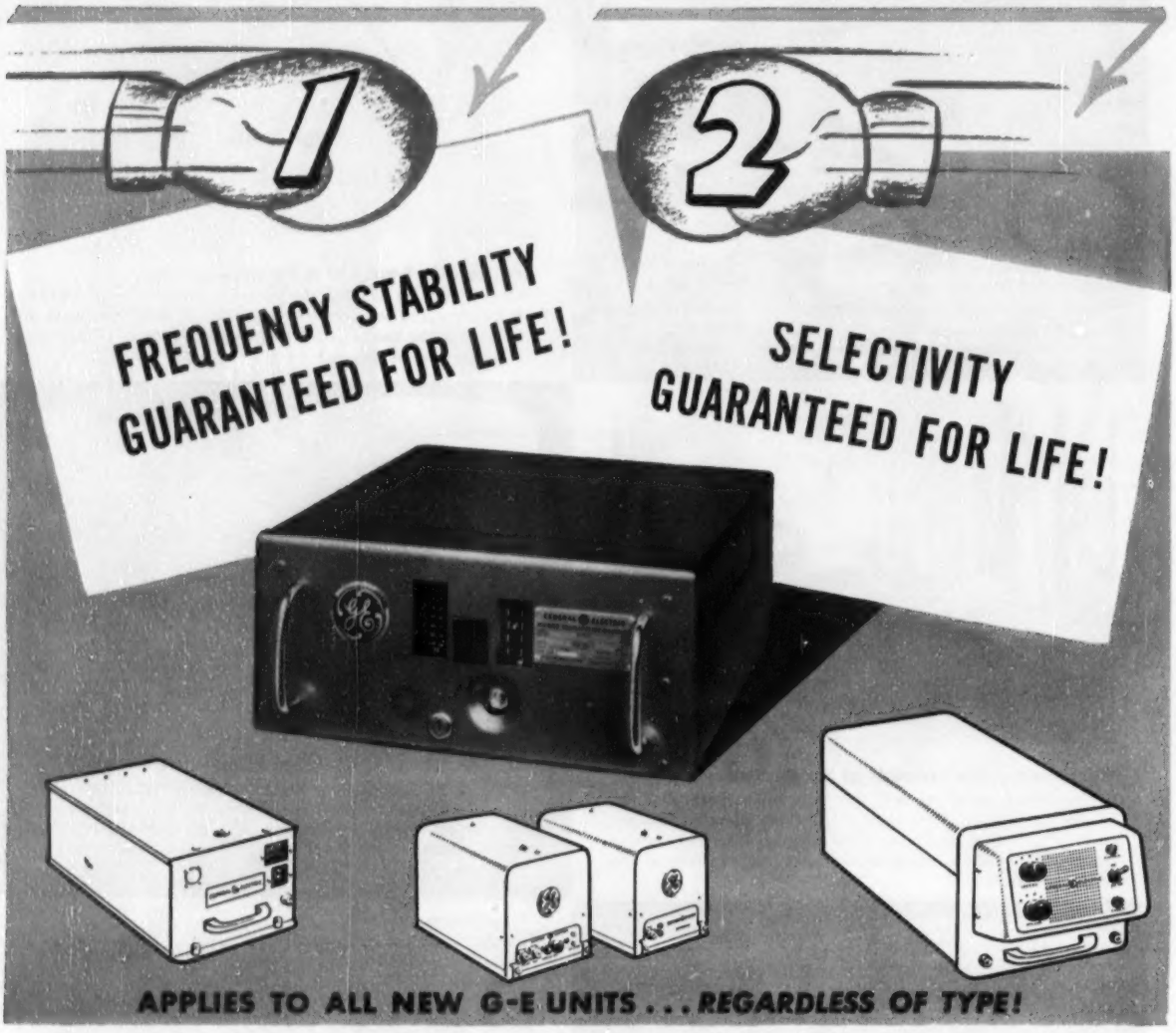
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Bldg.-front fixtures light city district

For forty-five years the people of St. Paul, Minn., groped in two-tenths candlepower illumination while street lights suffered damage at the hands of juvenile vandals, and gloom-shackled motorists.

The problem began with the installation, in 1905, of the city's first pole-mounted street lights, but it was solved by St. Paul city engineers who developed a street light that could be bolted directly to a building front.

The time-tested result, according to city officials, is illumination you can read by, no more damaged light poles and no more lamps broken through vandalism.

• **Businessmen demanded improvement**—The development of the new lighting system took nine years, after downtown business firms demanded a series of business district improvements designed to widen the streets and sidewalks and provide better light.

Narrow, 40-ft streets in some parts of the district gave an old-fashioned appearance, and merchants soon realized that actual widening would be impracticable, so they settled on a plan that would give them the appearance of greater width.

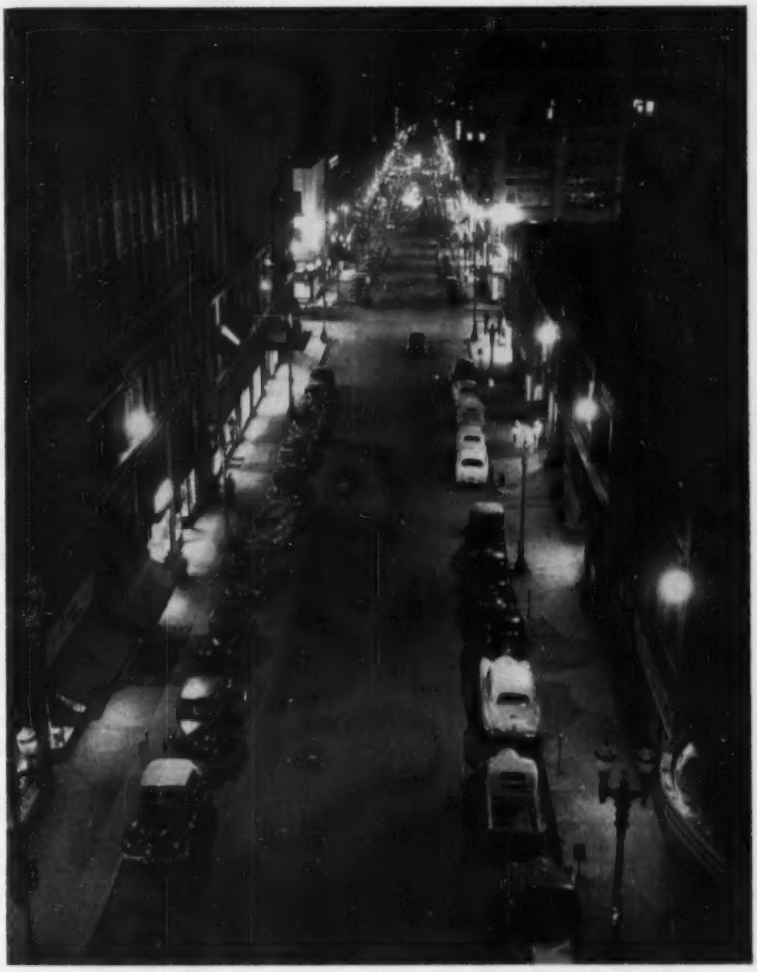
The plan made in cooperation with city engineers, was to remove lamp posts, to clear the streets of visual obstructions, and to bracket lighting fixtures directly to building fronts. It soon became apparent that many of the city's buildings were structurally inadequate to support the heavy lighting fixtures and brackets then in existence.

• **New-type fixtures developed**—Harry C. Streich, city superintendent of lighting and electrical engineering, visualized a different method of solving the problem. He suggested development of a light that could be fastened to a building wall without brackets.

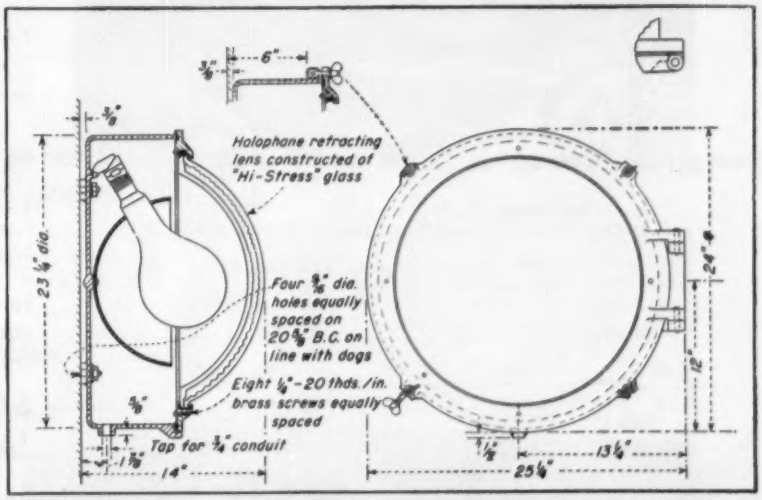
Consultants from several illuminating manufacturing companies were asked to study the problem, and one furnished several small test lenses considered applicable to the job. After a test installation, it was decided that a larger refracting type of lens would be suitable.

Orders were placed for 222 fixtures cast of ¼-in. aluminum, 23¾ in. in diameter and only 13⅛ in. deep. A

(*Continued on page 51*)



LIGHT YOU CAN READ BY is the way shoppers describe these wall-type street luminaires. Removal of old light posts will clear obstructions.



LIGHT WEIGHT, COMPACT, BRACKETLESS—all this and much better light to.

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Keep Summer Roads Hard, Dense, Tight and Stable!

Proper stabilization with STERLING ROCK SALT and clay gives road wearing surfaces the flexibility to adapt themselves to the weather—hot or cold, wet or dry. For rock salt is Nature's own soil stabilizer.

In hot, dry weather, STERLING ROCK SALT rises, crystallizes—and firmly "anchors" the clays and fines at the wearing surface. That's why, even after prolonged dry spells, a Sterling stabilized road will show a tough, firm surface.

So don't let a lot of your work and the taxpayer's money go up in dust this summer. Prevent the loss of surface materials—and the extra repair and maintenance that follows in the wake of summer dust clouds on unstabilized roads.

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☐ Please send Road Stabilization literature.
☐ Please have representative call.

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Company_____

Street_____

City_____ Zone_____ State_____

Plan now to stabilize with STERLING ROCK SALT. For information on up-to-the-minute methods—old roadbeds or new construction—fill out and mail the coupon at left.

INTERNATIONAL SALT CO., INC.
INDUSTRIAL DIVISION
Scranton, Pennsylvania

STERLING ROCK SALT
"Nature's Own Soil Stabilizer"

bulb was mounted inside the unit with a highly polished aluminum reflector. The fixture could be mounted on the wall with four ⅝-in. bolts.

The refracting lens redirects light from the reflector and the direct lamp in a spreading beam pattern up and down the street, with the beam cut-off slightly above the curb line on the opposite side of the street.

Each lens is 20 in. in diameter, and 6¾ in. deep, and is made with a double refracting principle that meets rigid optical requirements, with high resistance to shock and heat.

St. Paul's Commonwealth Electric Co. was awarded the contract for installation of the new fixtures, complete with wiring. The electric company also installed control cabinets and the main control panel. From this panel, separate remote control relays are set up for all night and midnight circuits in the 120-volt, AC system.

• **Installation data**—All 222 building-front lights are mounted 26 ft above the sidewalk line, with 170 of the units placed 75 to 90 ft apart—about 10 per block—and 48 of the units were installed 12 per block on four blocks. The remaining four units were placed on one side of a short block.

The units spread a directed beam of light to the street level averaging about 2.5 footcandles in illumination intensity per block. The single 750-watt bulb in each unit is designed for 1,000 hours of use, and furnishes 15,600 lumens. The old fixtures provided about one-tenth as much illumination as the new ones.

• **Efficiency survey**—Retail merchants requested a survey by a private firm of architects and engineers, and Ellerbe & Co., of St. Paul, submitted their report, a part of which follows:

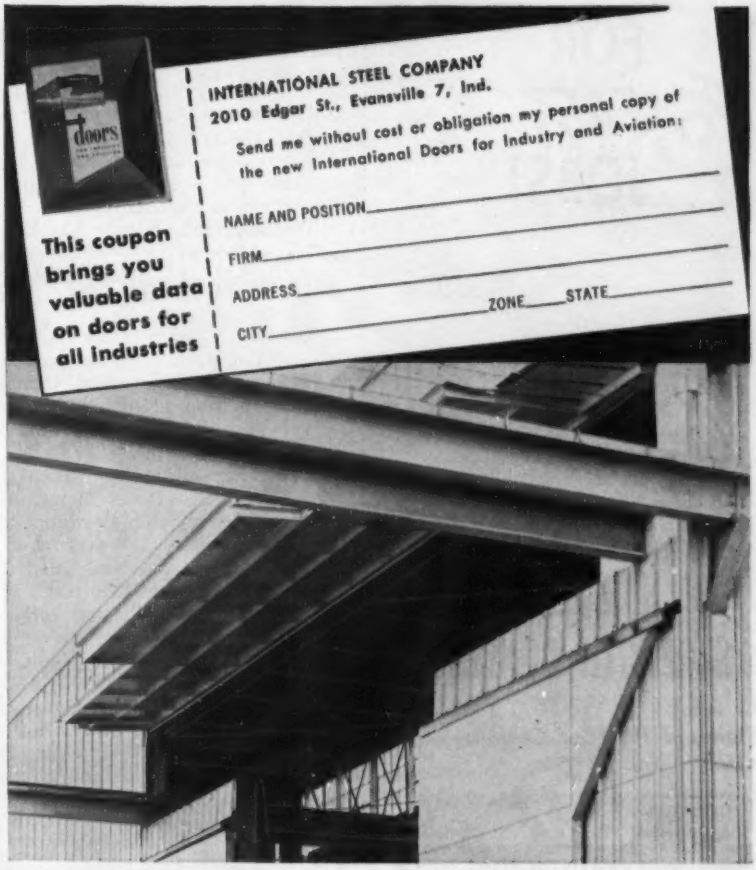
"Conclusion: The new refracting-lens street lights provide an illumination that is remarkably uniform both on the sidewalks and on the street with the greater illumination on the street, where it should be. It is a very efficient unit with a high utilization factor, which means that a great percentage of the output of the new lamp is useful illumination.

The new lights, in addition to providing approximately ten times more illumination on the street, are far superior to the old lights from the standpoint of glare. . . ."

The report continues, ". . . We feel that any extension of this lighting system to other streets in downtown St. Paul would be entirely justified."

According to Streich, the new

(*Continued on page 52*)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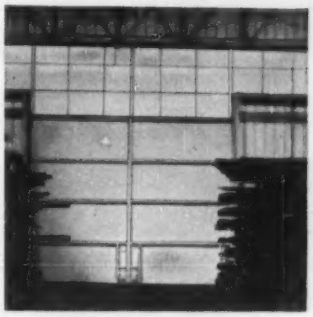

Interior view of International Crane Door installation, built for steel warehouse service.

THIS KING-SIZE MOTORIZED CRANE DOOR — with an over-all area of 350 square feet and each square foot weighing a full 100 pounds — is the kind of project that can be a problem without the benefit of experienced planning help. In this case, the big 17½-ton crane door was completely engineered as well as fabricated by International Steel.

In all cases, International's all-inclusive service . . . from sitting in at the planning stage to actual fabrication and erection . . . is yours to use, any time and any part, in speeding any industrial door problem to a profitable solution. International's experience is all-inclusive, too — covering every type of door for in-plant or outside applications. You'll find this confirmed in the valuable handbook offered in the coupon above. Send for your personal copy *today*.

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You get *extra speed* in your concreting operations—when you want it . . . without sacrificing quality . . . without increasing costs for special cement—by using Standard Portland Cement and SOLVAY Calcium Chloride!

No need to change the design of your mix. Use the same standard cement and aggregates you already have on the job. Just add SOLVAY Calcium Chloride to Standard Portland Cement and you cut finishing time, curing time and delays between operations—by 50%.

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luminaires have reduced maintenance costs considerably. Post painting has been eliminated, and replacement of damaged light bulbs has not been necessary due to the inaccessibility of the fixtures to youthful vandals.

Toronto, Ont., already has begun the installation of similar lights.

The fixtures were developed from Streich's original drawings in the laboratories of the General Electric Co., and lenses were furnished by Holophane Co., Inc., of Newark, Ohio.

Air terminal for "Pacific Crossroads"

Honolulu International Airport—one of the world's busiest—is about to get a new $4.7-million terminal made up of six buildings that will replace the existing three-building facility.

Preliminary plans have been approved by the Hawaii Aeronautics Commission, and the Territorial Department of Public Works now is drafting construction plans that are to be presented late this year.

Construction should start early in 1955 with completion in mid-1956.

The present terminal buildings split operations between two sides of the field that is called "the Crossroads of the Pacific," and they are so loaded according to officials, that alterations and additions must continue even though the new terminal facilities are definitely planned.

• **Preliminary features**—Following the theory that first impressions count, planners have evolved layout sketches focused toward introducing air travelers immediately to island atmosphere.

The traveler's first sight as he steps from the plane concourse will be of Aloha Court, planted with lush tropical vegetation. The court will open into a waiting lobby furnished for lounging and decorated with details with the Hawaiian motif.

As planned, construction will be of reinforced concrete faced with lava rock from an island source, and will feature use of native woods.

• **Cost data**—According to present estimates, here is the breakdown on units of the terminal:

1) Waiting lobby serving both inter-island and overseas	$ 241,000
2) Main building and overseas unit	2,412,530
3) Foreign arrivals	400,000
4) Inter-island facilities	780,010
5) Sky room	334,425
6) Pan American cargo, servicing and flight kitchens	375,000
Demolition and miscellaneous	162,000

Forcing the construction program is

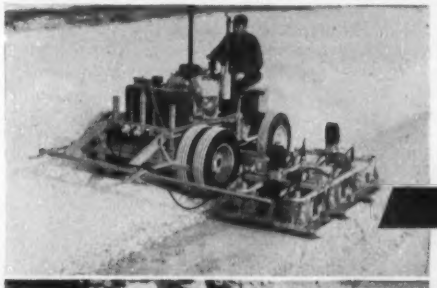
(*Continued on page 54*)

FOR SEAPLANE AND AIRLINER ALIKE—terminal location is ideal for both.

4 WAYS TO BETTER PAVING and BIGGER PROFITS!

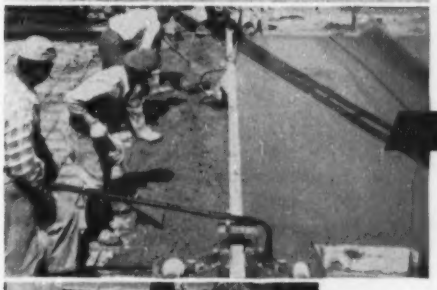
MACADAM CONSTRUCTION

The **JACKSON VIBRATORY MULTIPLE COMPACTOR**, with a total compaction width of 13′ 3″, working speeds of 0′ to 60′ per minute and reverse travel speed of 5½ M.P.H., in one pass will compact 12″ of rock to support smooth rollers. In 4 passes compaction to final density may be obtained. With 2 passes all voids from top to bottom can be filled with fines. And in gravel sub-bases 7″ thick, one pass suffices to produce densities exceeding



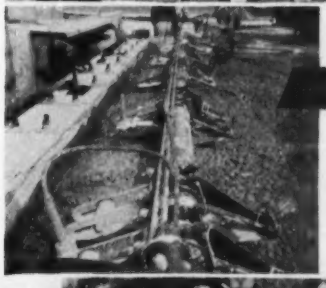
100% Standard Proctor. It's also extremely advantageous in compacting granular soil fills, such as bridge approaches and large factory floors. For the tight places the individual compacting units may be fitted with operating handles and used as self-propelling manually-guided compactors.

PAVEMENT WIDENING



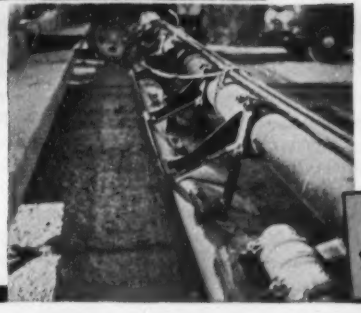
In any granular material the **JACKSON MULTIPLE COMPACTOR** will compact the widening strip in just one pass. For this purpose compacting units are assembled in tandem and towed at side of tractor. Assembly adjusts to accommodate varying dimensions of widening strips.

MUNICIPAL PAVING, BRIDGE DECKS



Walks, Drives, etc.: The **JACKSON VIBRATORY SCREED** strikes off to all crowns, undercuts at curbs and side forms, works right up to and around obstructions and is quickly and easily rolled back for second passes. Suitable to all slabs up to 30′ wide. Most productive and convenient screed made. Operates from JACKSON Portable Power Plant.

CONCRETE AIRPORT AND HIGHWAY PAVING



The current, super-powered **JACKSON *Internal* PAVING TUBE** will thoroughly vibrate all concrete slabs as thick as 24″ and as wide as 25′, quickly plasticizing the very dry, harsh mixes. Attached to a standard finisher, its use materially reduces spreading labor where no spreader is used. Adapted to ***Surface*** vibratory operation, it will do a perfect job of vibrating any mix in depths up to 12″

Powered by JACKSON Portable Power Plant on parent equipment and controlled by its operator. *The one machine that meets ALL specifications.*

***See* YOUR JACKSON DISTRIBUTOR OR WRITE US FOR COMPLETE DETAILS**

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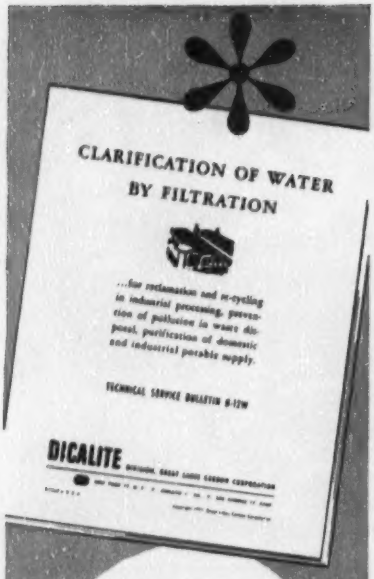

This FREE Bulletin gives valuable data on water filtration...

Many problems in the reclamation or recycling of water in industrial processing, in the prevention of pollution in waste disposal and in the purification of potable supply are answered in DICALITE'S BULLETIN B-12-W—"Clarification of Water by Filtration."

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Los Angeles 17, California

a 100% increase in overseas passenger traffic during the last seven years. Inter-island travel over the same period has increased 27%.

Ben Nutter, territorial superintendent of public works, claims that the new terminal will be able to handle three or four times the present passenger volume without becoming as crowded as the present terminal is.

Besides that, says Nutter, the new buildings will concentrate all passenger facilities in one area of the airport and be located between land and sea landing strips to accommodate seaplane passengers if those craft come back into general use (At present, NATS Mars flights use the sea strip almost daily).

To alter the terminal for commercial overseas flights by seaplane, all that would be needed is a passenger and baggage subway under present vehicular approach roads.

• **Priority of construction**—The first contract will call for a control tower, the main office building with overseas passenger facilities on the main floor, a separate passenger room for inter-island flights, and a common waiting room and concession facilities for overseas and inter-island flights.

A restaurant building can be added later and, until it is, existing restaurant facilities can be used. The same applies to a health and customs-clearance building for handling passengers and planes arriving from foreign areas.

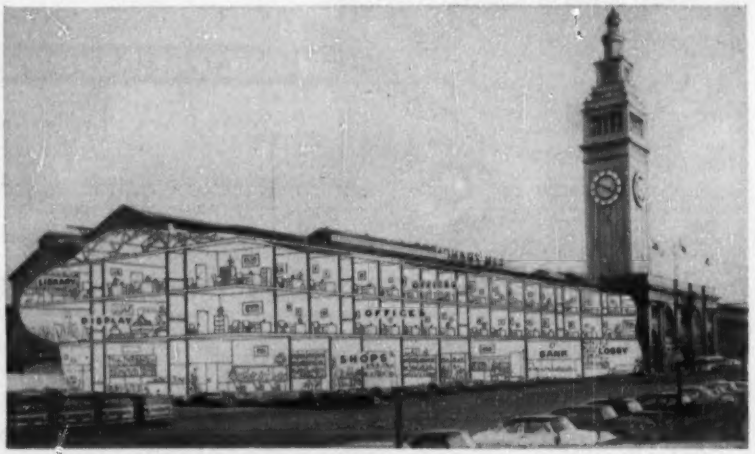
Whether repair and maintenance hangars will be on the same side of the airport as the passenger terminal depends upon release or exchange by the Navy of needed area adjoining the terminal. Negotiations are under way and final location of these buildings awaits the outcome.

• **Alternate studies for passenger handling**—Changes in preliminary plans of interiors are dependent upon final channeling of passengers. Two plans are being considered.

1) Continuation of present air-passenger operations—Departing overseas passengers move with their baggage first to an agricultural inspection, then to the airline counter to check tickets and turn in baggage, and finally to the U. S. immigration inspector for verification of citizenship. Under this sequence, travelers are instructed to allow a full hour before flight time for clearance operations.

2) Nutter favors a plan that would combine agricultural inspection and baggage reception at the automobile

(*Continued on page 57*)



Landmark becomes trademart

San Francisco's proposed $2-million World Trade Center in the historic Ferry Building probably will get under way next January, according to a recent announcement, as a $5.6-million revenue bond issue for harbor improvements was sold in Sacramento, to Blythe & Co., Inc., and Assoc.

The bid for the 30-year bonds was par at $560, with an interest rate of 4%. Working plans for the trade center are being drawn by William Gladstone Merchant, San Francisco architect and the construction bids are expected to be called in the late fall.

Sketch shows how a modern three-story structure will be built inside the north wing of the 57-yr-old landmark by Board of State Harbor Commissioners to provide offices, display space, restaurants, shops, a reference library and other facilities.

Besides the trade center, proceeds of the bonds will be used to develop an integrated ship-rail-truck terminal and to construct a six-level, 650-car public parking garage.

Fenestra 50 YEARS OF BUILDING PRODUCT LEADERSHIP

"A salute to those who made it possible" *

Here is a typical Fenestra Structural-Acoustical Ceiling in St. Mary's School, Port Washington, Wis.
Architect: Mark Pfaller Associates, Milwaukee, Wisconsin.
See the great Fenestra Exhibit at Booth 35 at the AIA Convention in June.

New Acoustical Structural "D" Panels. Width 24". Depth 1½" to 7½".

Unique Acoustical Product Saves $26,000 in New School!

Look at this paragraph from the *Magazine of Building* article entitled, "Structural Economy"!

> "Light-gauge, welded acoustic steel deck, a double-duty, factory-built material, saved 59c per sq. ft. ($26,000 in all). It was erected in only ten working days, replaced separate roof deck and framing and eliminated acoustical ceilings and plastering."

The structure was the Central High School in Kenosha, Wisconsin. The architect was Lawrence Monberg.

And the "factory-built material": Fenestra* Acoustical "AD" Panels! A Fenestra Structural-Acoustical "AD" Panel is a box beam with a flat surface top and bottom. The top surface of the panel is the subfloor or support for finished roofing. The perforated bottom surface forms the ceiling. Inside the box beam is glass fibre insulation.

Why not cut your own building costs with a Fenestra combination structural-acoustical ceiling. It goes up *fast*—the panels lock together simply and quickly, saving days of labor and a lot of money. It is practically indestructible. Bumps and knocks can't hurt it. The acoustical efficiency is not affected by washing or painting. And these panels are *noncombustible!*

For further information call your Fenestra Representative. Or write Detroit Steel Products Company, Dept. ER-7, 2286 E. Grand Boulevard, Detroit 11, Michigan. *Trademark

* Your need for a maintenance-free, noncombustible, built-in acoustical treatment encouraged us to develop Fenestra Structural-Acoustical Building Panels—a great advancement in building products.

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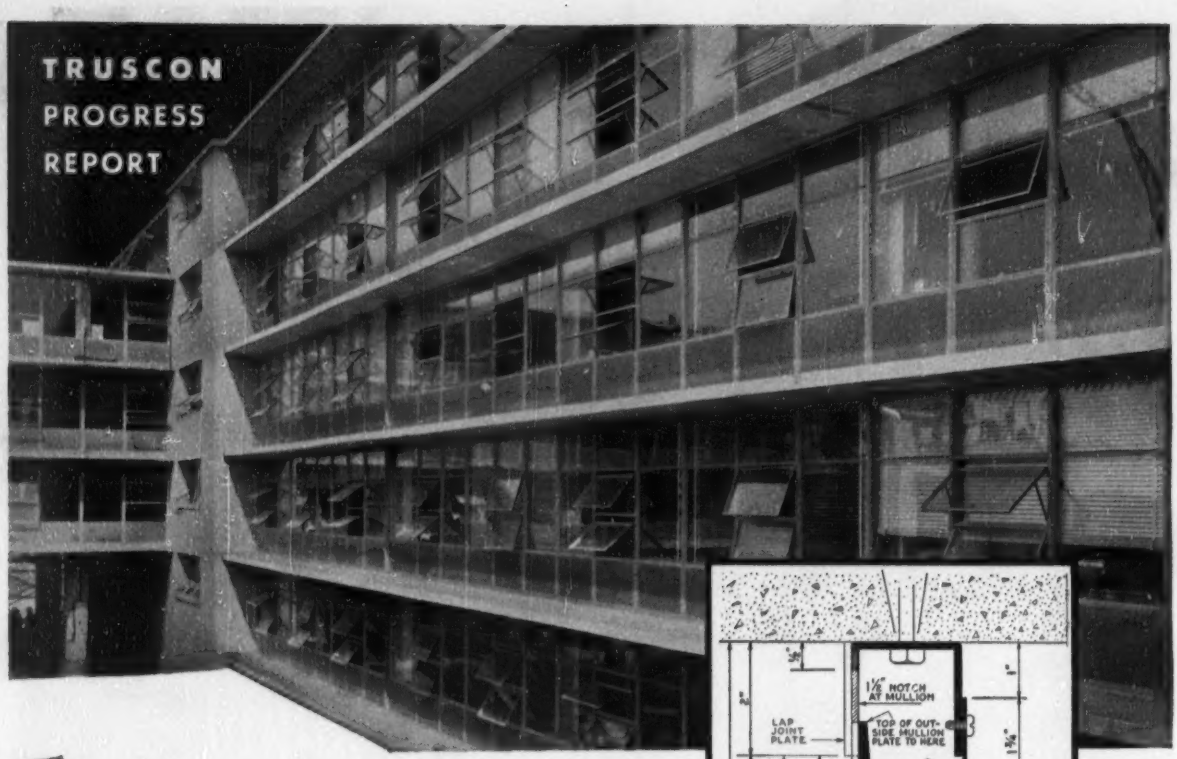

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Installed at Clemson College

Vision-Vent construction now is a reality! Initial installation is completed and in use.

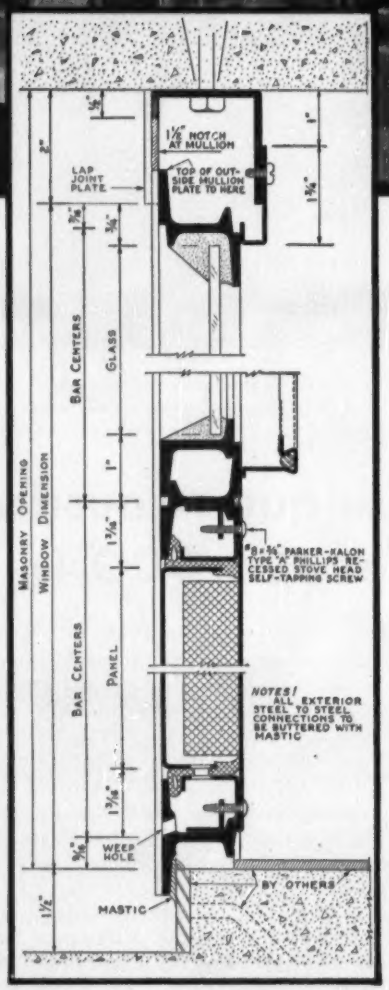
Vision-Vent is Truscon's exciting new approach to fast, economical construction. It is a complete wall panel that incorporates all the mass production and installation economies of standard steel windows.

Each Vision-Vent unit is *complete*, with fixed lights, awning type ventilators, and insulated steel panel. Elements can be varied to meet specific requirements.

Insulated panels may be colored porcelain enamel or stainless steel. They have a "U" factor of .197, equivalent to that of an ordinary masonry spandrel wall. They retain interior heat. They provide for efficient air-conditioning. Less than 1½" thick, they provide extra square feet of floor space. Light weight is reflected in structural savings.

Vision-Vent is weathertight. Erection is done from inside, and can average a floor-a-day rate.

Vision-Vent is recommended for all types of single- and multi-story buildings. Truscon engineers will be glad to study your requirements and develop design details and costs. More facts in Sweet's; or write:



Typical installation detail for Clemson Barracks.

Clemson Barracks, Clemson College, S.C.
Lyles, Bissett, Carlisle & Wolff, architects;
Daniel Construction Co., contractors.

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arrival bays. Here the passengers could have luggage inspected, weighed and tagged for proper flight, then proceed, baggage-free, into the terminal and complete all flight arrangements there.

Nutter believes that alteration of plans to embrace the latter plan would speed up the procedure greatly. In addition, he says the second plan would reduce the counter space required by airlines.

As at present laid out, the main building will have 23,858 sq ft of office space for overseas carriers, and inter-island facilities housed in an adjoining building will be provided with about 22,000 sq ft.

All preliminary designs have been submitted by architect Theodore A. Vierra.

Rapped by dailies—

County commission scored for "happy family" ways

One of the most heated controversies in the history of the city of Miami, Fla., was touched off, recently, when an article appeared in a daily newspaper under the title "Happy Family" government.

Torched by the Miami Herald and carried along jointly after the Miami Daily News joined in, the dailies are questioning the manner in which "The Dade County Commission passes out business and favors to its friends."

Central figure in the squabble, according to the papers, is Earle M. Brader, onetime Dade County engineer, now the head of his own engineering firm, stockholder and officer of a local testing laboratory and member of the county's seven-man planning commission.

• **Qualifications unquestioned**—While the dailies stress the fact that Rader's long experience in the field indicates his eminent qualification to serve as a member of the board, they point out that as a private engineer he has received as much as $155,000 per year from the county in fees.

The six commissioners who, with Rader, make up the planning body, also constitute the county zoning commission (of which Rader is not a member) that passes on all subdivision plats and sewer and water systems—extremely active at this time throughout the county.

Rader's firm does considerable subdivision layout work and has handled most of the engineering work on the

(*Continued on page 58*)

". . . the Master goes faster than the mixers."

"Our Master Screed is a one-man-gang. It does everything at once, faster than we've done it before. We've upped our schedules and really cut our costs."

General contractors and road builders say that, because *in one time over*, the Master Vibrating and Finishing Screed strikes off, vibrates and compacts—from top to bottom—even the lowest slump concrete, making a denser, stronger slab than any other way we know of.

It eliminates honeycomb and form work on bridge decks, molds the concrete in crowns, arcs or flat for roadways and *cuts 'way down on finishing time for any slab.* This cost-cutting, top-quality screed is inexpensive and economical to operate. Available with arc or flat. Send the coupon below for more information, no obligation.

☐ **Turn-A-Trowel.** Floats and finishes; rigid blade mounting gives precision finish; float and finish blades in single unit, can't get lost; gas and elec.; 34", 48" sizes.

☐ **Concrete Vibrator.** 9,000 rpm vibration, yet lightweight; rugged, gives long service; gas and elec.; wheel mounting available; accessory tools; 1½ to 6 hp power units.

☐ **Remote Power Vibrator.** This "Hycycle" runs 2 high-speed vibrators (10,300 rpm) as far as 300' from power unit; mounted on wheelbarrow, wt. only 172 lbs.; 6.6 hp engine.

☐ **Midget Trowel.** New Lightweight, one man carries; gets into tight spots; only 24" across yet does top trowel job 6 times as fast as by hand. 70 lbs., 1.6 hp engine.

☐ **Portable Generator Plants.** AC or DC; gas, diesel, natural gas engines, ½ KW to 12.5 KW; portable mountings. Also continuous duty plants up to 20 KW Floodlights.

☐ **Vibrating and Finishing Screed.** Produces better quality slab than any other method we know, by superior deep vibration. Mixers can't keep up with high speed strike-off, compaction and finish (follow up with broom, bull float or Turn-A-Trowel). Handles low slumps, 3½" down to *zero*. Gas or elec (any voltage, phase or cycle); 6' to 30' lengths.

☐ **Portable Space Heater.** Clean, instant, odorless heat blown where you want it; rugged, longlasting, trouble-free; uses kerosene or fuel oil; 160,000 to 400,000 BTU.

MASTER

SEND FOR CATALOGS and full information. Check boxes above, under products you're interested in. Clip lower half of ad and mail to Master Vibrator Co., 139 Stanley Avenue, Dayton 1, Ohio

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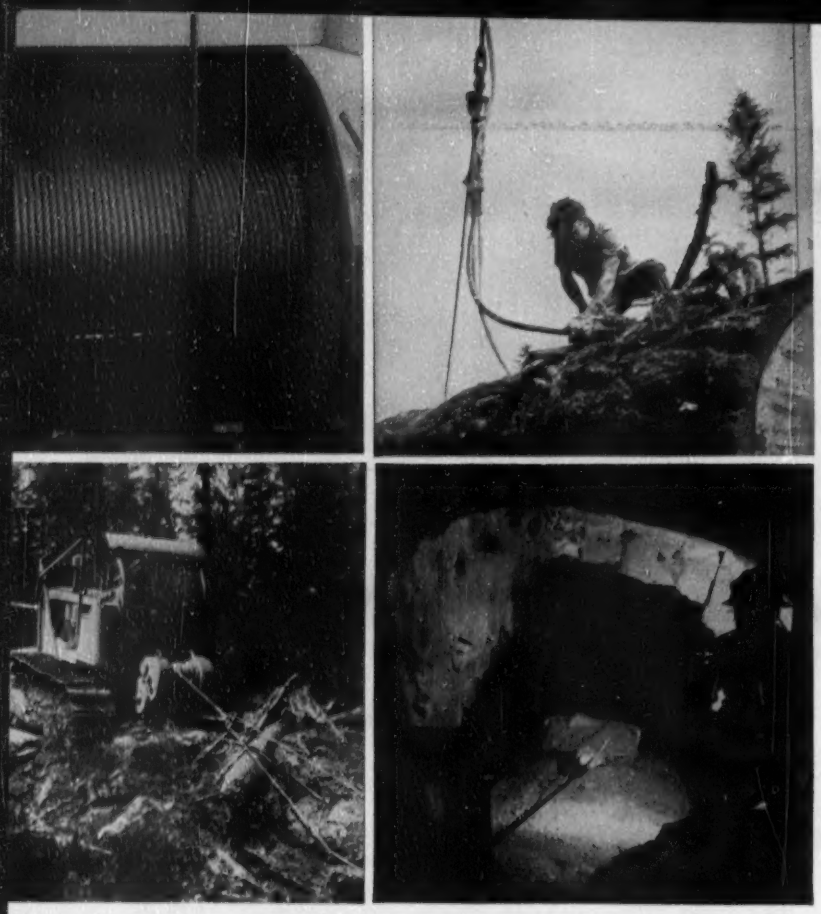
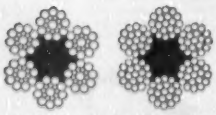
STREET_____ CITY_____



ABRASION often gives wire rope a beating. Rope is squeezed under tremendous pressure on rotary drilling drums in Texas oil fields. In the Northwest it drags under heavy logs. In mining it is scraped over rocks to operate slushers. Everywhere it is rubbed severely on winches that do not wind smooth. Under such conditions Red-Strand 6 x 19 Seale wire rope lasts longer and saves money.

What can you do better with 6 x 19 Seale Red-Strand?



6 x 19 Seale 6 x 19 Filler Wire

6 x 19 Seale has the same strength and weight as the more frequently used 6 x 19 Filler Wire, but the arrangement and size of the wires is different. You can see in the diagrams that the outer wires are fewer in number and larger in size. They provide *high resistance to abrasion* and greater wearing quality with somewhat less flexibility.

It's the perfect rope for certain jobs. Would it solve a problem for you? Be less trouble? Save more money? A Leschen man is near you. Perhaps he can help. Leschen is providing *longer-than-expected* wire rope service to industry everywhere.

Send for the 64-page Leschen Wire Rope Handbook. It describes Seale and all other Red-Strand wire rope constructions.

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The Watson-Stillman Company
(A SUBSIDIARY OF H. K. PORTER COMPANY, INC.)
St. Louis 12, Missouri

LESCHEN
HERCULES Red-Strand
WIRE ROPE

subdivision sewer systems and water treatment plants being built in Greater Miami.

Although, in his planning commission capacity, Rader does not actually pass on subdivision plats, waterworks and sewer systems, the newspapers have made much of the fact that in this post he is closely associated with the six men and women who do pass on them as members of the zoning commission.

In addition, the papers point out that Rader, as consulting engineer on many public projects, has retained the testing firm, Wingerter Laboratories, (of which he is a stockholder) to check materials, concrete beams, etc., which his company, as consulting engineer had either specified or designed.

• **The commission defends position**—In a 27-page report—printed without deletions in the Herald, the commission presented its answer to all charges, including those concerning Rader.

They pointed out that in airport development alone average fees paid for engineers and architectural services on federal projects at Miami International Airport, have been somewhat less than 7.73% as compared with average fees of 9.17% paid in Florida state airport projects. They asserted further that the International Airport fees were substantially lower than at other major airport projects in Philadelphia, New York, Chicago and San Juan, P. R.

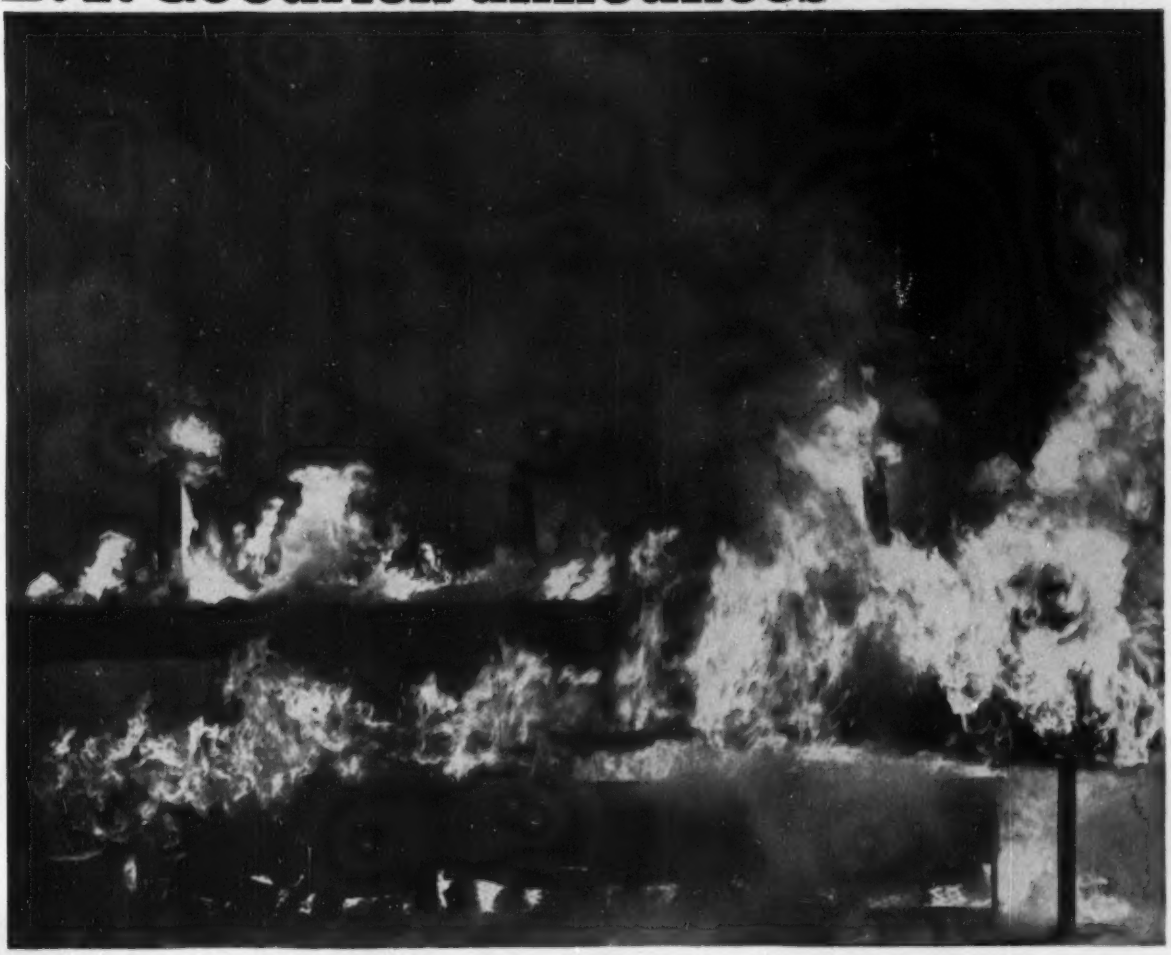
In answer to the charge that the commission, while maintaining its own engineering department, pays out huge sums to outside engineering firms, the planing body admitted that it maintains its own engineering department, which they called "well versed in the type of engineering required of them."

However, the commission report continued, "the Civil Aeronautics Administration, which pays about half of airport improvement cost, will not allot funds for use of our engineering department and our fiscal agents . . . will not agree to use our engineering department, because, in their language—"We have no objection to use of the Dade County engineering department, but the purchasers of your bonds and certificates will not invest their money unless the engineering is done by firms acceptable to the bond attorneys, who are required to pass on the legality of sale.

• **Answer to Rader query**—The report explained the Rader charge as follows: "With reference to the charge against Mr. Rader as a member of the

(*Continued on page 60*)

B. F. Goodrich announces



Koroseal now used in roofing helps prevent fires like this

Koroseal is part of new Lexsuco roof construction

A NEW type of construction cuts out a fire hazard in flat roofs. Koroseal flexible material is used to replace the conventional vapor barrier made up of asphalt and layers of asphalt-saturated felt.

Use of Koroseal eliminates burnable material between roof deck and insulation. It also prevents tar or asphalt from dripping down to feed fires below the roof. Other features of the new roof make it more rigid, help cut down buckling during a fire.

The Koroseal flexible material used in the Lexsuco roof construction is specially compounded for this use. It is supplied in rolls for easy handling. It is laid out in strips and the laps are sealed. Full-scale fire tests have proved the advantages of this new type of roof over ordinary construction. Yet the complete roof costs no more, sometimes less than standard roofs. B. F. Goodrich does not make direct sales of Koroseal for roofing—*you can get complete facts by writing Lexsuco, Inc., 4819 Lexington Ave., Cleveland 3, Ohio.*

Koroseal flexible material is made in many forms: hard or soft, film or sheet, it can be molded or extruded, fabric can be coated with it. Koroseal may have many future uses in the construction industry. It is waterproof; will not crack, chip or peel, is not affected by paint or by most chemicals and acids. If you have a problem Koroseal may help solve, write: *The B. F. Goodrich Company, Marietta, Ohio.*

Koroseal—T. M. Reg. U. S. Pat. Off.

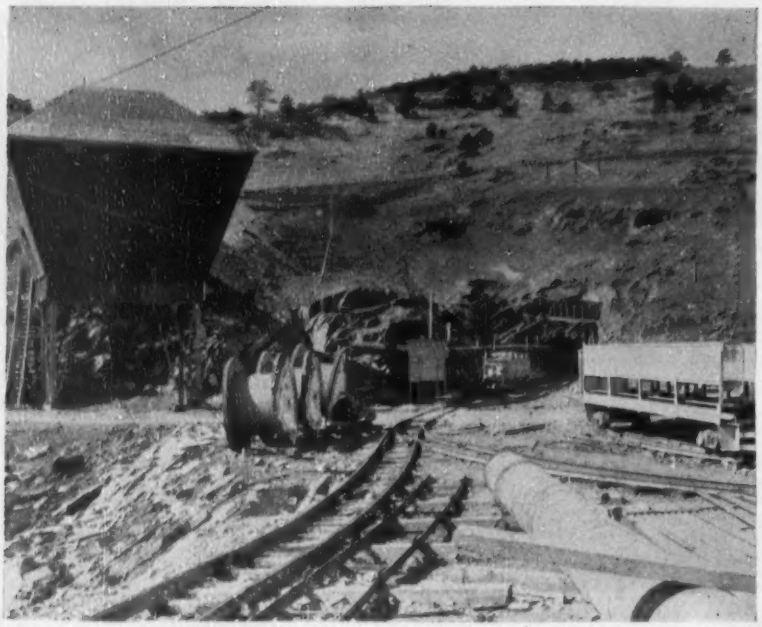
Koroseal

FLEXIBLE MATERIALS BY

B.F.Goodrich

INDUSTRIAL PRODUCTS DIVISION

THIS PIPE GIVES EXTRA HANDS TO CONTRACTORS



Lines of large diameter Naylor pipe are just like extra hands in the construction field. They carry air. They carry water. They do a whale of a job on ventilating in tunnel work and other underground construction. Light weight makes Naylor lines easy to handle and install. The extra strength of the lockseamed-spiral-welded structure adds what it takes for these lines to stand up in rough service. The Naylor Wedge-Lock coupling simplifies connection and speeds construction right down the line. Diameters from 4" to 30" and wall thicknesses from 14 to 7 gauge provide size range to meet all requirements. Write for Bulletins No. 507 and No. 513.

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planning board, his appointment came at the request of the other planning board members and the plans and subdivisions are approved by the board of county commissioners and not by the board of which Mr. Rader is a member."

"Please be advised that this board has never been guilty of taking official action on any matters involving the public of this county or their funds, except in the commission chambers with the press and public present."

Municipal briefs . . .

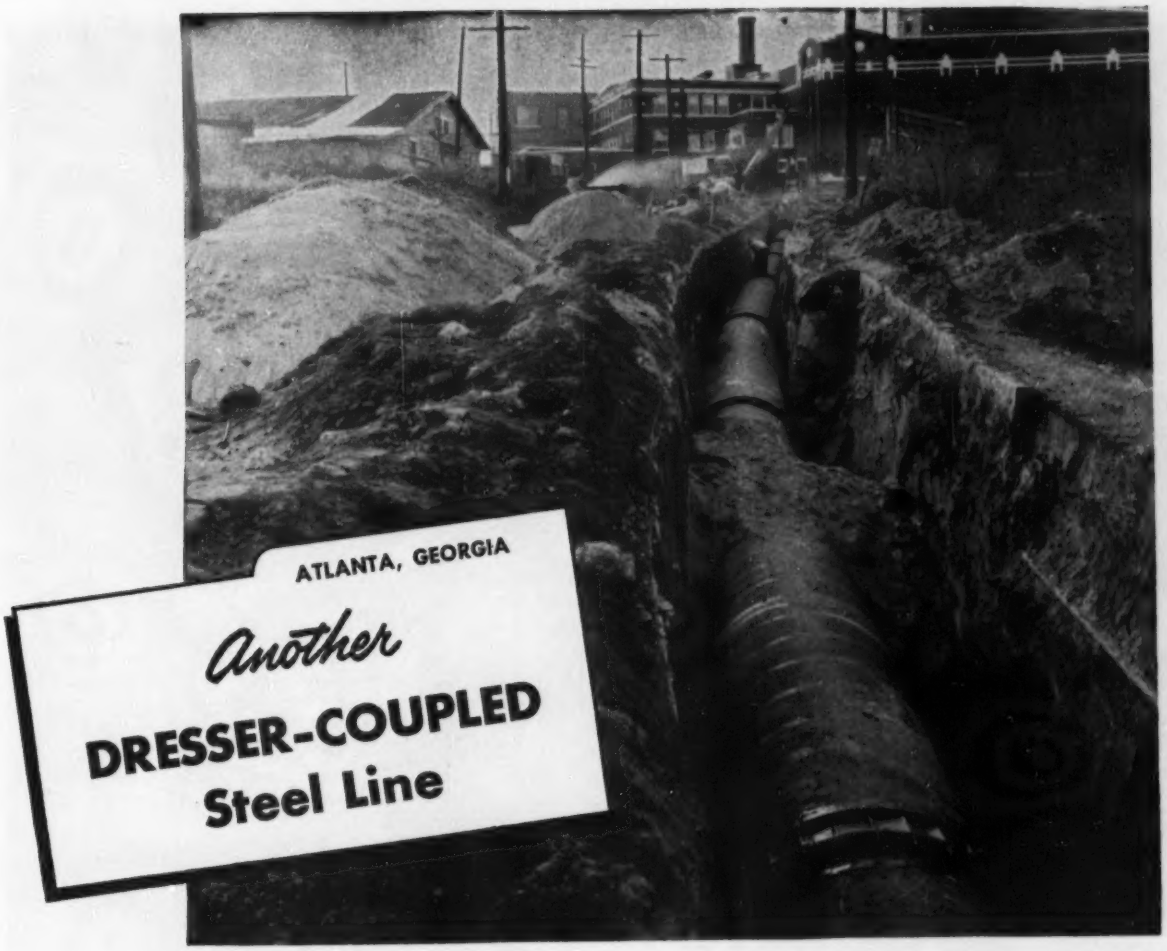
• **Water abuse fines**—Denver, Colo., has adopted a system of fines for failure of taxpayers to conform to the city's rigid three-days-per-week watering restrictions. The water board has employed 50 inspectors to enforce the plan. Notice is given consumers for the first misuse, a $5 fine for the second, $25 for the third and $100 for each additional infraction. Failure to pay will result in shutting off service.

• **Resort buildings surveyed**—New York City is carrying on an intensive inspection of resort structures, and to date, of 1,584 buildings checked, 369 violations have been exposed in 165 buildings. Of these, 247 were housing and building or utilities infractions, and 122 were fire violations.

• **State code relaxed**—At the request of four cities, Charlotte, Winston-Salem, Greensboro and Raleigh, the North Carolina State Building Code Council has liberalized limitations on the size of multi-story open-deck parking buildings. Granting legality of five instead of the four levels allowed up to now, and increasing permissible floor areas from 10,000 to 30,000 sq ft, was accomplished despite state insurance rating bureau opposition.

• **City owned asphalt plant**—Over protests from private contractors, the San Francisco board of supervisors has given its blessing to a proposed city asphalt plant. The $407,000 plant, when finished, will replace an old asphalt plant that has been supplying material for paving projects for more than 40 years.

• **New bid requirement** — Lucas County, Ohio, Commissioners have adopted a policy of requiring all contractors bidding on county projects to file confidential reports with the county engineer, listing their financial standing and the amount of equipment they have. The aim is to discourage incompetents.



DELIVERS WATER CHEAPER!

Ditch test at 150 psi proves joints bottle-tight—wins approval for quick backfilling in heavy traffic areas.

Installing the West Belt feeder main, to increase Atlanta's water supply and boost pressures, meant laying a 48-inch main through densely populated areas. Atlanta engineers—after finding the first 1000 feet of Dresser-Coupled steel pipe absolutely tight—permitted the contractor to backfill as fast as the joints were completed.

More line was laid in less time because lighter weight steel pipe meant easier handling. Long pipe lengths required fewer joints. Use of Dresser Couplings meant faster pipe joining, small crews, easier supervision and less heavy equipment.

The beam strength of steel pipe, plus the resilience of both pipe and couplings, assured Atlanta engineers a rugged, flexible line that will be permanently tight . . . maintenance free.

BE SURE **you get the *best* line at the *best* price. Always put steel pipe and Dresser Couplings in *your* specifications.**

DRESSER® COUPLINGS

Dresser Manufacturing Division, 69 Fisher Ave., Bradford, Pa. (One of the Dresser Industries). Warehouses: 1121 Rothwell St., Houston, Texas; 101 S. Bayshore Highway, South San Francisco, California. Sales Offices: New York, Philadelphia, Chicago, Houston, South San Francisco. In Canada: Toronto, Ont.

Jaeger 125's on pipeline job

do 30% more work with the same tools*

To speed the laying of pipeline in this busy boulevard, a pair of Jaeger 125's were used in place of obsolete 105 ft. compressors to do the job 30% faster.

This capacity to get more work out of today's heavy air tools has made the "125" the most popular of all compressor sizes. Jaeger established this 125 rating 6 years ago and guarantees to deliver this volume at the lowest cost per cu. ft. of air of any portable air compressor on the market.

Now, when cost-savings are so important, talk to your Jaeger distributor. He has no obsolete size machines to sell you. He can save you money on air and air tool operation.

* Each 125 had the air volume needed to hold 2 heavy duty breakers at full pressure operation, hitting up to 1600 times a minute with a heavier impact of 55 to 60 foot pounds in every blow. With that 10 lbs. heavier impact, and 200 to 300 additional blows per minute, the same air tools easily averaged a third more work.

Jaeger Standards:	**75**	**125**	**185**	**250**	**365**	**600**
Old Standards:	60	105	160	210	315	500

For full information, ask for Catalog JC-1

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Wide World photos

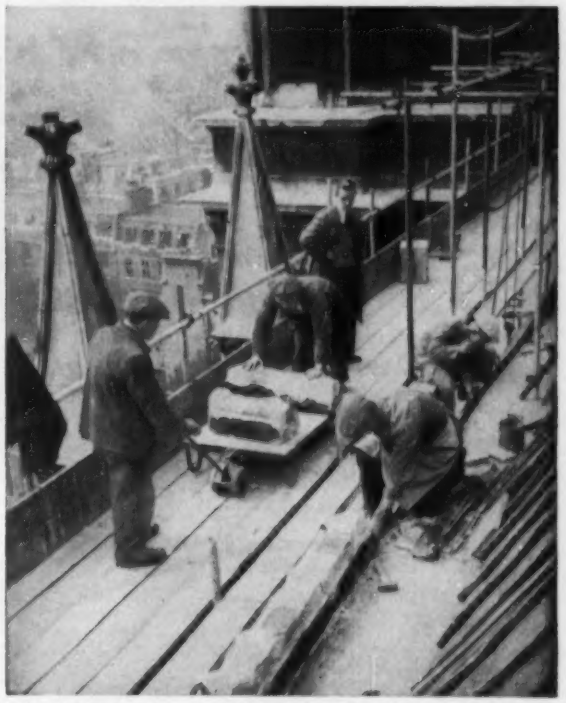
ROME'S COLOSSEUM is in danger of crumbling.

Face-lifting history

Wreathed in auras of antiquity, three great structures in the Old World are undergoing, or are about to undergo, major renovations to overcome the ravages of time.

In Rome, Italy, the Colosseum, built between 72 and 80 A.D. by the Flavian Dynasty, has developed great cracks in what remains of its 160-ft-high walls. Crews working from scaffolding are attempting to stop the threatened ruin of the ancient arena believed caused by construction of Rome's new subway running underground a few yards from the north side.

Jerusalem's Church of the Holy Sepulcher, founded 1,619 years ago by the Empress Helena and now in the custody of six Christian sects, has fallen into disrepair because of the inability of joint controllers to agree on repairs. A fire last November destroyed the main dome and the cupola in front of it. The present Basilica is largely the work of 12th and 13th Century Crusaders. A thorough inspection of the structure is to start this summer.



ENGLAND'S WESTMINSTER ABBEY undergoing restoration.

England's Westminster Abbey, started in 1245 A.D. and under construction for 500 years, is undergoing a vast restoration program to replace all of the loosening stonework on the south parapet.

JERUSALEM'S CHURCH OF THE HOLY SEPULCHER, founded in 335 A.D., is due for complete renovation.

Speeding 4,000,000 yards of excavation on the Ohio Turnpike

A fleet of Caterpillar-built machines and engines is moving the total excavation on contract sections C-56, 57, 58, 59 of the nation's newest turnpike project. One overpass doesn't make a turnpike, but it helps explain how V. N. Holderman & Sons, Inc., is doing this big job.

NEAR the western end of the 241-mile Ohio Turnpike, big yellow machines and Caterpillar* Engines are rushing to completion an important 14-mile section. The contract—approximately $10,250,000—was won by V. N. Holderman & Sons, Inc., Columbus.

Among other things, it calls for moving 4,000,000 yards, nearly all borrow. Total borrow for the entire Turnpike is 30,500,000 yards, so Holderman is moving more than 10 per cent of the total.

To do this big job quickly, the contractor has called on a fleet of Caterpillar equipment—four DW20s, four DW-21s, 18 D8s, three D7s, four No. 12 Motor Graders, three No. 80 Scrapers, and three Cat* Diesel Engines to power a Sierra loader, a Lima crane and a Bucyrus-Erie dragline.

One job—an overpass—in section C-56 illustrates how Holderman is using Caterpillar teamwork to do the job. Near the overpass site a Bucyrus-Erie dragline with a 2¼-yard bucket powered by a seven-year-old D17000 Diesel, is changing the channel of a stream to run into a box culvert. Extent of repairs on this hard-working engine: one fuel pump. Not far away a D318 is powering a Lima crane unloading steel for the bridge.

A Sierra loader, powered by a D318 Engine and pulled by a D8, is loading three No. 20 Scrapers pulled by DW20s, with the round-trip record above. The units are unloading at the overpass where a No. 12 Motor Grader is grading, a D8 equipped with a No. 8A Bulldozer is leveling, and a D7 is pulling two sheepsfoot tampers.

And in the borrow pit a D8 Tractor

THIS RECORD OF DW20s IS SPEEDING THE DAY		WHEN THE TURNPIKE WILL SAVE MOTORISTS
Workdays	6 per week	1 hr. 27 min. between Cleveland-Toledo
Hours per day	9 hours	1 hr. 43 min. between Cleveland-Pittsburgh
Round trip	1.8 miles	1 hr. 27 min. between Cleveland-Detroit
Load per trip	20 yards	2 hr. 4 min. between Youngstown-Toledo
Loading time	35 seconds	1 hr. 3 min. between Toledo-Akron
Time per round trip	6⅛ minutes	3 hr. 23 min. between Pennsylvania-Indiana borders

LOADING TIME 35 SECONDS—and it's an all-Caterpillar performance! Loading a DW20 Scraper is a Sierra loader pulled by a D8 and powered by a D318 Engine.

CHANGING CHANNEL to run into a box culvert at the overpass is this 2¼-yard dragline powered by a D17000 Engine.

AS A FAST-MOVING DW20 spreads, a variety of Caterpillar equipment moves into place ready to go into action.

A VERSATILE NO. 12 MOTOR GRADER quickly begins to grade the approach to the Turnpike overpass.

is push-loading three DW21s for spreading on the Turnpike near the bridge.

This fast, efficient, smooth-running Caterpillar combination is one reason that the Turnpike expects to be open to traffic by October 1, 1955. Holderman & Sons, like so many contractors, knows the many advantages of standardizing on Caterpillar equipment for profit-building performance.

Many engine parts are interchangeable, cutting down tremendously on the parts inventory. Operators and mechanics learn one make of machinery, and can get the most work out of it. And, most important, you get quick, efficient one-stop service from one dealer.

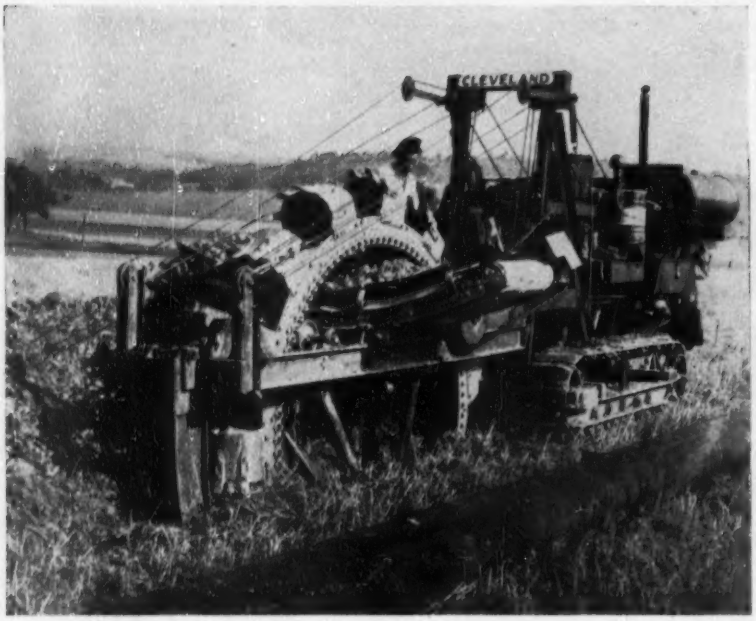
So follow the lead of road-building leaders. Be wise and standardize on Caterpillar equipment.

AND A D8 WITH NO. 8A 'DOZER is on the job leveling as quickly as the borrow is spread by the DW20s.

TWO-SECTION SHEEPSFOOT TAMPER follows up the leveling operation. Pulling is a D7 with No. 7A 'Dozer.

CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS, U. S. A.

*Both Cat and Caterpillar are registered trademarks—®



Voilà!

This is the Way to Dig!

ACROSS A ROLLING MEADOW IN FRANCE this Cleveland "110" is showing its speed and ease of operation on a pipeline job under favorable soil and weather conditions. On other projects in France, Clevelands have demonstrated their ability to turn out high production in adverse soils and terrains.

These projects comprise trenching for oil, gasoline, gas and water lines, buried cable for telephone and postal telegraph systems, airport construction and drainage systems. Repeat purchases by French owners are concrete evidence of completely satisfactory Cleveland performance.

The practical combination of proved-design features and quality construction found exclusively in Clevelands have made them standard equipment for dependable trenching performance the world over.

Write for descriptive bulletins and specifications, or get the full story on CLEVELANDS from your local distributor.

THE CLEVELAND TRENCHER CO.

"Pioneer of the Modern Trencher"

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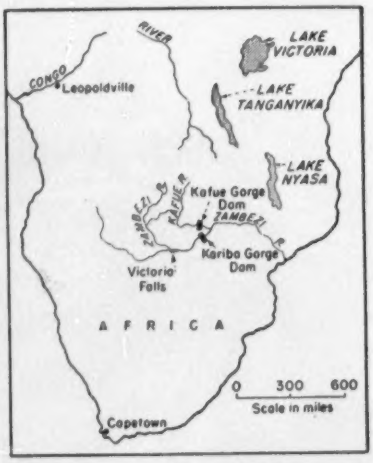


Study big hydro schemes for Rhodesia in Africa

Preliminary designs have been made for two large hydro power projects in the Rhodesia area of south, central Africa where great copper reserves are being developed.

One is the Kariba Gorge Dam in Southern Rhodesia on the Zambezi River about 200 miles below Victoria Falls, the other the Kafue Gorge Dam, Northern Rhodesia on the Kafue River which joins the Zambezi about 25 miles below Kariba Gorge.

Financing the projects is one of the big problems. At present the Federation—seeking a $100-million loan to start both projects—is awaiting the arrival of a misison from the International Bank for Reconstruction and Development. (The bank already has invested $28 million in thermal electric plants in Southern Rhodesia plus $14 million in Northern Rhodesia.)

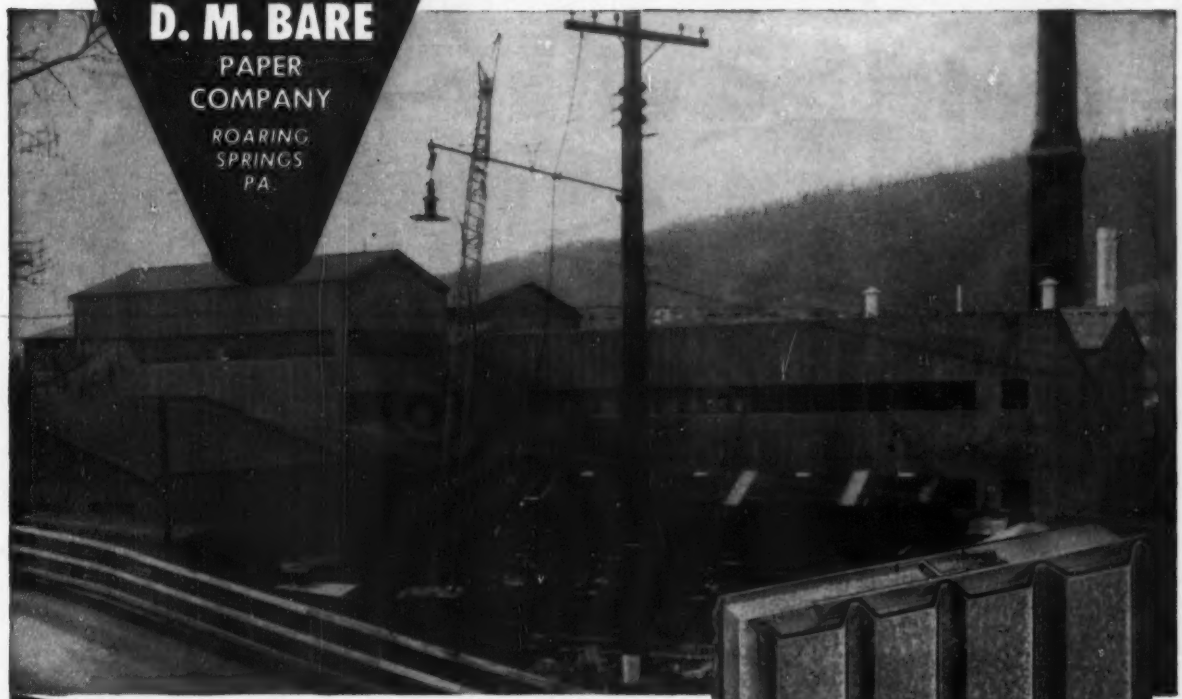
The two dam sites are relatively close together, and a controversy has raged for some time over the issue of which project should be built first. A five-man board has been set up between Northern and Southern Rhodesia to study the feasibility of the two hydro plans.

The Kariba Dam can be located at one of several sites in the Gorge, all of which require a structure about 400 ft high. It would impound a lake 150 miles long and provide enough storage in the top 40 ft to provide complete regulation of the river whose flow varies between 7,000 and 300,000 cfs in dry years and in floods. An initial power installation of 300,000 kw at 70% load factor is planned at a cost of about $70 million. The ultimate installation is envisioned as 1,000,000 kw.

The Kafue Dam would be built

(*Continued on page 70*)

The
D. M. BARE
PAPER
COMPANY
ROARING
SPRINGS
PA.



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PLASTEEL Insulated Panels—first choice for another major industrial installation. Here is the answer to long-life, maintenance-free curtain wall construction. PLASTEEL "Mica-Protected Steel" resists corrosive fumes from acids and alkalis. And, because it practically eliminates all metal to metal contact, condensation is minimized and insulation efficiency is increased. PLASTEEL Panels have a "U" factor equivalent to 16" of masonry wall construction—permitting the use of lighter building foundations, less structural steel and more usable floor space. Also, they allow closer control of plant temperatures and humidity levels. PLASTEEL Panels are quickly erected and so flexible in design that alterations or building expansion can be easily handled at minimum cost.

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2,400-ft. shore line of protected with a tight wall of USS SHEET PILING

SITUATED at the apex of the famous Golden Triangle —where the Allegheny and Monongahela Rivers meet to form the Ohio River—the new Point State Park is part of Pittsburgh's vast redevelopment program.

One important phase of this project involved the construction of a river wall and wharf along 2,400 feet of shore line around the Park by the Contracting Division of Dravo Corporation.

Approximately 1,700 pieces (1066 tons) of MZ-27 interlocking USS Steel Sheet Piling ranging in length from 25 to 35 feet were driven to form the practically watertight, sandtight wall.

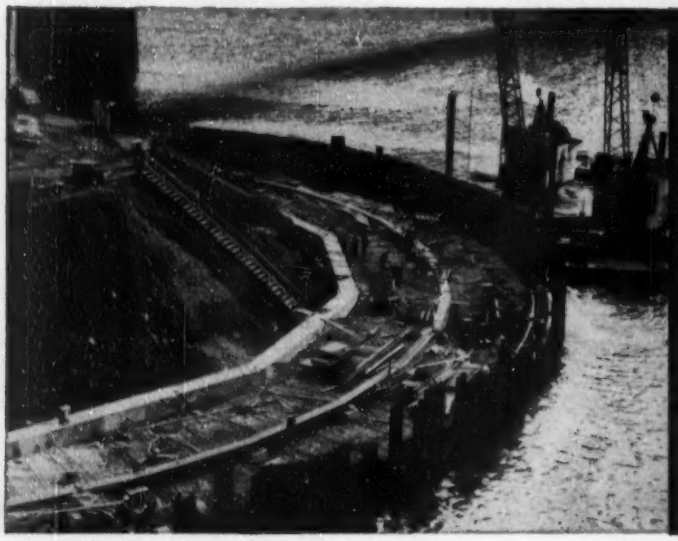
Employing the ball-and-socket type interlock, and having a uniform web and flange thickness of 3/8 inches, MZ-27 steel sheet piling sections are designed to afford high section modulus and long life at minimum weight.

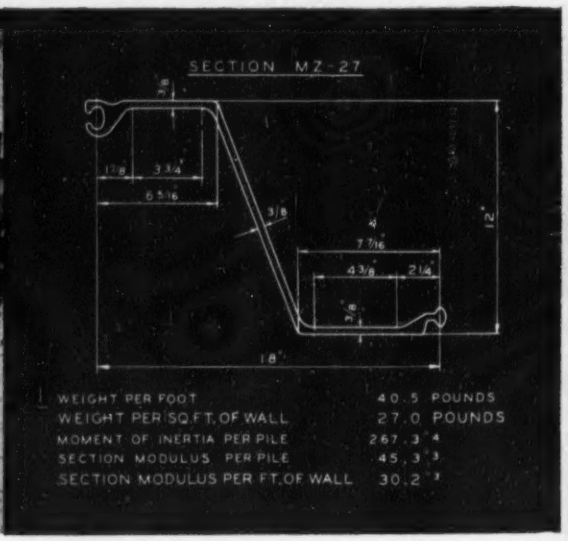
Interlocking USS Steel Sheet Piling keeps earth and water in place permanently and economically

Assembled in easily driven units that positively interlock to the next, USS Steel Sheet Piling forms a wall that is sandtight and continuous and that can be made practically watertight. Because of its great strength, long life, low cost of installation and low maintenance cost, this versatile piling has proved invaluable in projects involving the retention and control of earth and water.

Available in straight web, arch-web, and "Z" sections, USS Steel Sheet Piling is a finished product as shipped, ready to be handled and driven under the most difficult conditions of soil, water or surf. An inquiry to the sales office nearest you will bring suggestions for any special problems you may have.

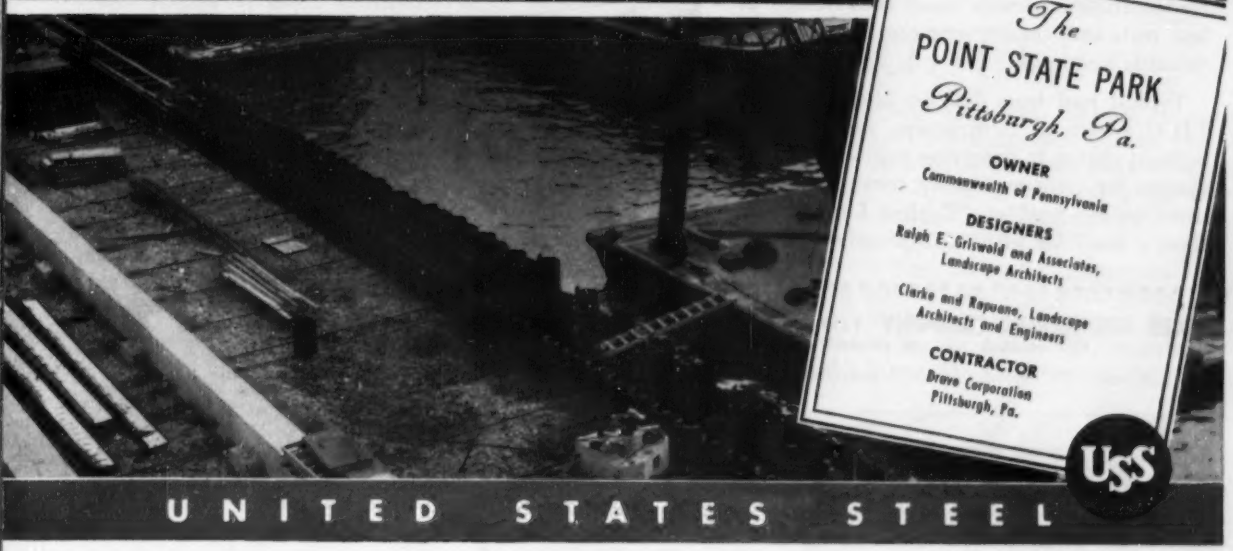
UNITED STATES STEEL CORPORATION, PITTSBURGH · COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
UNITED STATES STEEL EXPORT COMPANY, NEW YORK




SECTION MZ-27
18"
WEIGHT PER FOOT 40.5 POUNDS
WEIGHT PER SQ.FT. OF WALL 27.0 POUNDS
MOMENT OF INERTIA PER PILE 267.3 I⁴
SECTION MODULUS PER PILE 45.3 S³
SECTION MODULUS PER FT. OF WALL 30.2 S³

Pittsburgh's new Point Park

GENERAL PLAN OF
SHORELINE RETAINING WALL
Point State Park
Pittsburgh, Pa.



The
POINT STATE PARK
Pittsburgh, Pa.

OWNER
Commonwealth of Pennsylvania

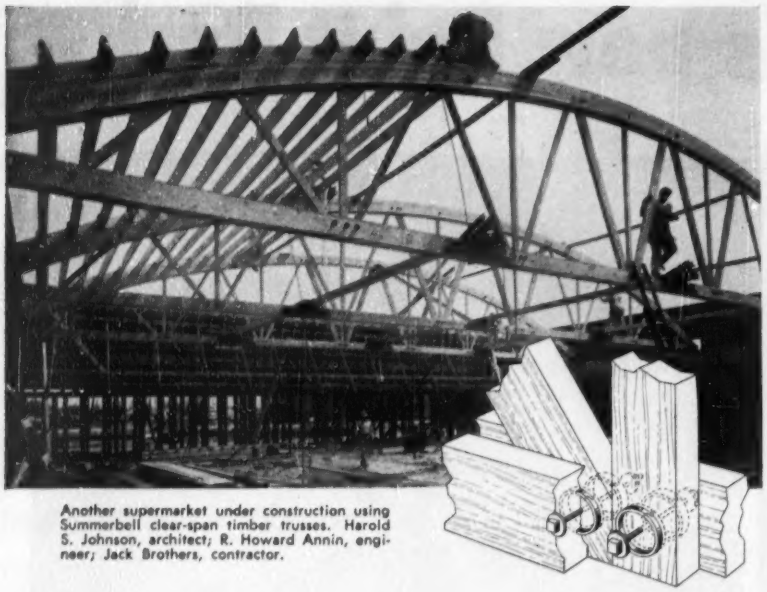
DESIGNERS
Ralph E. Griswold and Associates, Landscape Architects

Clarke and Rapuano, Landscape Architects and Engineers

CONTRACTOR
Bravo Corporation
Pittsburgh, Pa.

USS

UNITED STATES STEEL



Another supermarket under construction using Summerbell clear-span timber trusses. Harold S. Johnson, architect; R. Howard Annin, engineer; Jack Brothers, contractor.

You can put more useful, post-free space into supermarkets and other structures economically

TECO wedge-fit connectors spread the load more evenly throughout the timber joint, thus bringing into play the full structural strength of the wood members. They are the efficient key to strength, permanence and economy in modern timber construction.

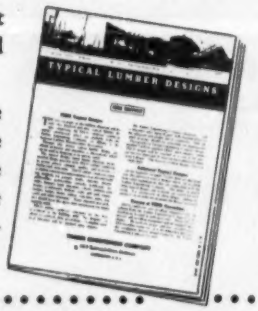
with CLEAR-SPAN

TIMBER TRUSSES

fabricated with TECO WEDGE-FIT CONNECTORS

Clear, unobstructed space, provided by TECO timber trusses, permits faster construction at less cost, and results in more versatile and valuable buildings.

Typical roof truss designs, illustrating the TECO system of construction, are available without charge to designing engineers. These designs for light and heavy construction are listed in the booklet, "Typical Lumber Designs". Send for FREE COPY today.



TIMBER ENGINEERING COMPANY 1319 18th St., N.W., Washington 6, D. C.
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ENR-549

across the head of its gorge and would require a structure about 100 ft high. Whereas the Kariba power plant would be at the dam, that at Kafue would be at the end of an 8½-mile tunnel at a 950-ft lower elevation. Kafue offers relatively small storage (unless continuing studies show that an additional storage dam can be built farther upstream) so that the scheme now being considered will be of 257,000 kw at 80% load factor.

Plans for the Kafue Dam have been approved already (ENR Mar. 26, 1953, p. 78). And a large industrial group with interests in the area's copper has offered to finance and construct the full Kariba project (total cost $216 million) in return for a 50-year franchise to supply power to the Rhodesian Federation.

Argentina prepares plans for first aluminum plant

Argentina—now entirely dependent on import trade for its aluminum needs—plans to build its first aluminum plant in the southern territory of Chubut, near Comodoro Rivadavia. The $25-million project, in final blue-print stage, is designed to deliver 10,000 tons of aluminum yearly.

The government's basic aim in developing the new industry is to make the country totally independent from outside supplies by the end of 1957, thus saving an estimated $6.5 million annually in foreign exchange. Future aluminum distribution will go mostly to government-operated industrial bodies, particularly to aircraft and automobile manufacturing plants.

Argentina hopes to interest German and Italian investors in the project since both groups already are planning active parts in building up metallurgical plants. But a major portion of the total investment will be financed through a system of taxation, supported for years to come by consumers of future home-made aluminum products.

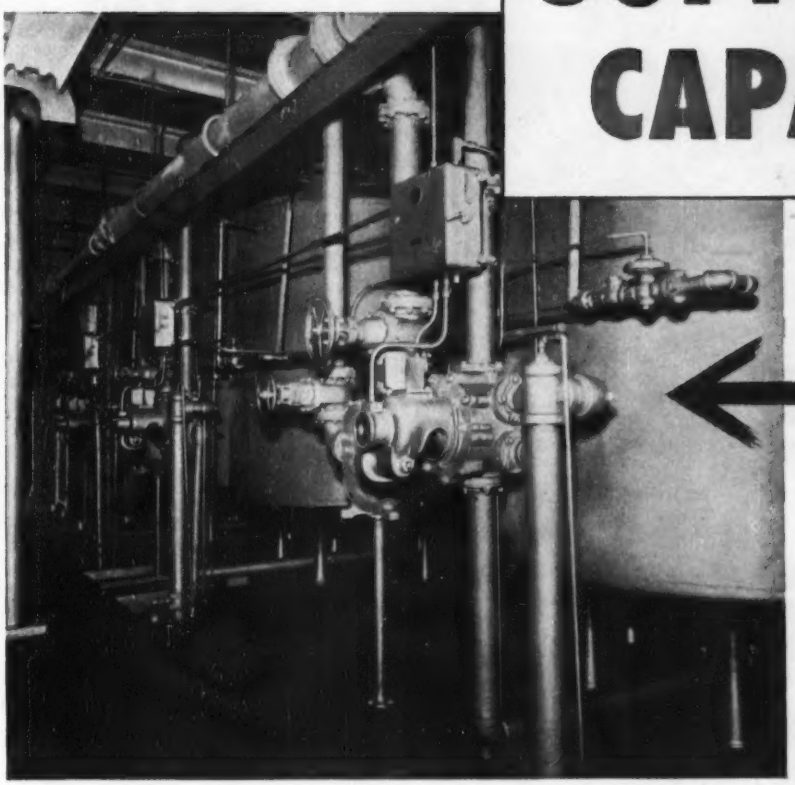
Italy's speedway plans

An Italian 10-year plan calls for widening and doubling 267 miles of the present speedway network (cost: $100 million) and building 1,118 miles of new speedways (cost: $480 million).

Chief routes to be constructed under the program: Milan-Genoa; Padua-Brescia; Milan-Bologna-Florence-Rome-Naples, with branch roads to the Adriatic Sea and for Sicily.

How the Town of Normal, Illinois

TRIPLED SOFTENING CAPACITY



...of the same softeners

...by changing to PERMUTIT Q

Replacing old-fashioned zeolite with the high-capacity ion exchange resin, Permutit Q, saves Normal over $7,000 a year!

Normal's three automatic softeners were installed back in 1946, before high-capacity Permutit Q was available. Each softener removed hardness from 83,000 gallons of water between regenerations for a daily delivery of 700,000 gallons of softened water.

Recently town officials called in Consulting Engineers, Farnsworth and Conley, of Bloomington, Illinois, who recommended replacing zeolite with modern, high-capacity Permutit Q.

Look at the benefits gained from this change! The capacity of each softener is up from 83 to 270 thousand gallons between regenerations. Salt Consumption – down to about ¼ lb. per thousand grains of hardness removed. Flow Rate–up from 285 to 510 gpm. Regenerations – down from 3 times to once per day per softener.

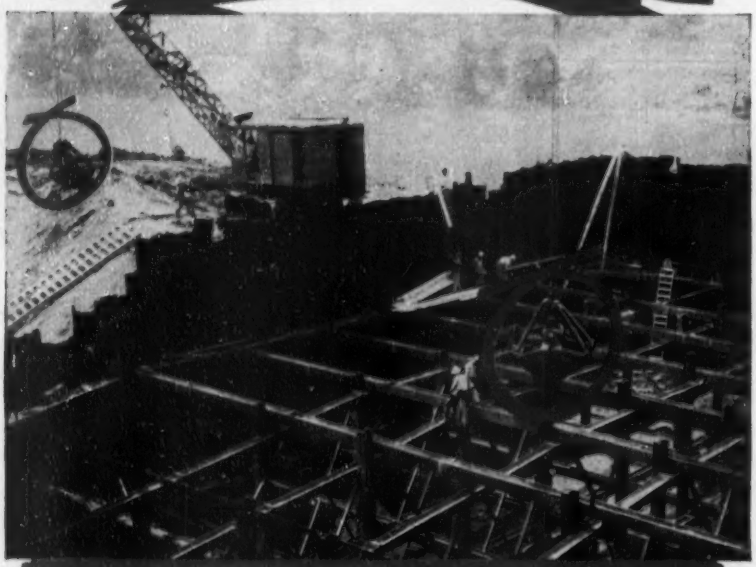
A change to Permutit Q may effect similar economies for your city. We'll gladly send helpful data.

The Permutit Company, Dept. ENR-7, 330 West 42nd Street, New York 36, N. Y., or Permutit Company of Canada, Ltd., 6975 Jeanne Mance Street, Montreal.

WATER CONDITIONING HEADQUARTERS FOR OVER 40 YEARS

PERMUTIT®

PLACEMENT CONTROL



AN OWEN FEATURE

The placing of a bucket in a narrow trench or caisson; or between closely spaced cribbing requires skill.

Whether it "lands" properly to assure efficient digging is largely a matter of correct bucket design.

Many an operator prefers Owen Buckets because they respond readily to his efforts — go where he wants them to go — and land in unseen places in an upright position ready to take a tremendous bite.

It's largely a matter of design — proportioning and balance, all of which are built into every Owen Bucket as a result of decades of "know-how" based on specialized experience.

AN ARMFUL AT EVERY GRAB

THE OWEN BUCKET CO.

6010 Breakwater Ave., Cleveland 2, Ohio

BRANCHES: NEW YORK, PHILADELPHIA, CHICAGO, BERKELEY, CALIFORNIA, FT. LAUDERDALE, FLORIDA

MEN AND JOBS

AIDIS Awards made

Awards were presented in June by the Interamerican Association of Sanitary Engineering (Aidis, an abbreviation for the Spanish name of the association) for outstanding hemispheric work in sanitary engineering in the Americas.

Edward J. Cleary, executive director and chief engineer of the Ohio River Valley Water Sanitation Commission, received an award because of his contributions to the congresses of Aidis, and as organizer and first president of the USA section of the Interamerican Association of Sanitary Engineering.

Donald L. Snow, senior sanitary engineer of the U. S. Public Health Service, was commended for his efforts which first produced an Interamerican Journal of Sanitary Engineering and for his organizing of the secretarial functions of Aidis.

Miss Dinorah Lopez-Molina, a member of the Interamerican Association of Sanitary Engineering, was cited for her aid in the capacity of a secretary, and later as an editor of the journal.

Ralph J. Van Derwerker, chief, Sanitary Engineering Office of the U. S. Coast Guard, was commended for his excellent work as secretary of Aidis and for building up the prestige of the journal while he was editor.

The association was started under the sponsorship of the Pan American Sanitary Bureau, regional office of the world health organization, and is an outgrowth of an arrangement made by the bureau in 1942 for a number of experienced sanitary engineers from national health services of many Latin American countries to visit the U. S. to study state and local health departments. The contacts were found to be so useful that the group urged the formation of a society.

Iowa road engineer retires

Fred R. White, main planner of Iowa's primary road system during 33 years as chief engineer of the highway commission, has retired from state service. He resigned as chief engineer in 1952, but since then has been consulting engineer for the commission.

He first went to work for the commission in 1908, when it was still a part of Iowa State College at Ames. (The commission wasn't set up as a separate entity until 1913.)

(*Continued on page* 75)

Hook... Clamshell... Magnet
Just like those you've seen a thousand times

BUT MAN!

wait till you see 'em become the busy end of the amazing new

AUSTIN-WESTERN HYDRAULIC CRANE

It's the *machine* behind the *man* behind the *boom* behind the *hook* that counts. Put them all together in a way never done before, and you get performance never seen before. That, in a nutshell, is the story of "the crane designed with you in mind."

Models for every type of work and terrain. All with 4-wheel steer... some with 4-wheel drive ...with torque converter... with 6-speed transmission... with hydraulic outriggers... with booms as long as 35 feet. The whole story makes mighty interesting reading.

COMPLETE HYDRAULIC BOOM OPERATION...

✓Reaches Far and High ...changes boom length and boom angle quickly and easily while under load.

✓Raises and Lowers ...picks up maximum loads, and transports them through low-clearance doors.

✓Rotates 360° ...simplifies and speeds up many operations, especially when working in close quarters.

AUSTIN-WESTERN COMPANY
Construction Equipment Division • Baldwin-Lima-Hamilton Corporation
AURORA, ILLINOIS, U.S.A.
Power Graders • Motor Sweepers
Road Rollers • Hydraulic Cranes

AUSTIN-WESTERN COMPANY
615 Farnsworth Avenue, Aurora, Illinois

Please send complete information and literature on the Austin-Western Hydraulic Crane.

Name .....
Title .....
Company .....
Street .....
City ..... Zone ..... State .....

LATROBE CONST. CO. turns MANITOWOC loose on turnpike rock!

Mighty MANITOWOC moves 550,000 yards of rock on West Va. 'pike in 4½ months!

MANITOWOC — again selected to handle the tough, rough assignments.

Here's a 5½ yd. Manitowoc owned by Latrobe Construction Co. of Latrobe, Pa., taking on a heavyweight job and licking it like a true champion. Take a look at that rock near Beckley, West Va.— and yet, this "4500" drives right in and digs out an average 3000-5000 yards per 10-hr. shift when the going is toughest. At times, this "mighty" Manitowoc knocks out up to 525 Euclid loads per shift — a hefty 14 to 17 yards per load! That's the kind of pay-off yardage that spells *progress* when you're smashing through rock and sandstone two shifts a day!

If you can use this kind of performance on *your* jobs — do what Latrobe and other contractors all over the nation are doing — swing over to mighty Manitowoc. Write Manitowoc Engineering Corp., Manitowoc, Wisconsin.

More Reasons Why More Contractors are Switching to MANITOWOC . . .

. . . Check These "4500" Features

• Fast operating cycles • Special hi-lift shovels and long-reaching booms • Crawler-type mounting for faster travel over all grades up to 30% • Wide pads and crawlers that produce lower ground pressure than larger shovels • Complete diesel operation, which permits traveling anywhere without a trailing cable or electric supply • Shock resistant tubular stick that rolls through the saddle • Twist-absorbing boom design. • Smooth, positive-action TORQUE CONVERTER available for even faster working speeds.

MANITOWOC

SHOVELS 1-5 YD. — Speed Crane — CRANES 18-100 TON

White—a past president of the American Association of State Highway Officials—received the George S. Bartlett award in 1939 for his outstanding contribution to highway progress, and the Anson Marston medal in 1952 for achievement in engineering.

Career Briefs . . .

New firm founded—LeRoy Crandall, Frederick Barnes, and Leopold Hirschfeldt have formed the firm of LeRoy Crandall & Associates in Los Angeles for the practice of consulting foundation engineering. Crandall was formerly Los Angeles resident partner for Dames & Moore.

• **Expert becomes executive**—John N. McGovern—for many years chief of the pulping section of Forest Products Laboratory, Madison, Wis.—has joined the executive staff of Parsons & Whittemore, Inc., New York City. Dr. McGovern will be active in the firm's international development program, launched a year ago to facilitate construction of pulp and paper mills in underdeveloped countries.

• **Elected president**—Walter H. Leo, manager of construction products sales for Sheffield Steel Corp., Kansas City, Mo., has been elected president of the Wire Reinforcement Institute, Inc. Leo formerly served the steel company as district manager in Dallas and St. Louis.

• **Switches at Safway**—B. D. Christian has been elected chairman of the board of Safway Steel Products, Inc., Milwaukee. Succeeding him as the firm's president is David G. Smith, former vice-president in charge of production.

• **Commission director retires**—Robert C. Georger, in New York State service for 46 years, has retired as director of the State Traffic Commission. He helped organize the commission in 1937 and played a leading role in developing the traffic control system for arterial highways.

• **Institute appointments**—Four Pacific Coast Division appointments have been announced by the Asphalt Institute. Phillip L. Bailey is the new district engineer in the Los Angeles office. Louis R. Hovater, former head of the civil engineering department at Donald R. Warren Co., Los Angeles architects and engineers, takes over Bailey's former duties as area engineer

(Continued on page 76)

It Saves Money to Do It the EASY WAY!

Exclusive Equipoise mechanism makes for accurate, fast drawing on an inclined board.

Now! Cut Drafting Time up to 40%

With a Bruning Equipoise Drafter!

A Bruning Drafter combines a T-square, straightedge, triangle, protractor and scales into one precision instrument. Because of this, any draftsman using a Bruning Drafter can far out-perform a draftsman using conventional tools.

Actual tests show that drawings can be completed with as much as a 40% saving in time—and in the case of some structural drawings, a saving of 50%. This means that one Bruning Drafter can actually save you thousands of dollars a year.

Bruning Drafters are built for precision and durability, with such outstanding features as the exclusive Equipoise mechanism which eliminates drift from gravity on an inclined drawing board, engine-divided protractor, and Touch Control for automatic indexing. All moving parts turn on precision ball bearings, permanently lubricated and sealed to protect against dust and dirt.

For free booklet giving you a full description of Bruning Drafting Machines, just mail us the coupon below.

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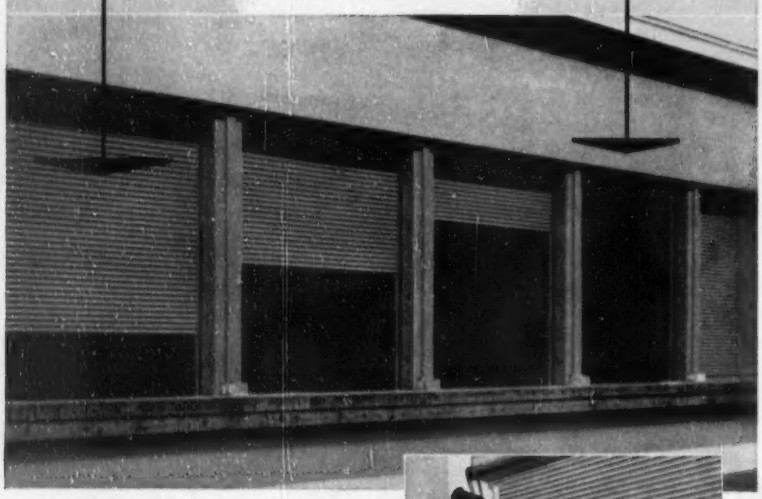
Interlocking steel-slat construction assures extra protection and longer life at lower cost*

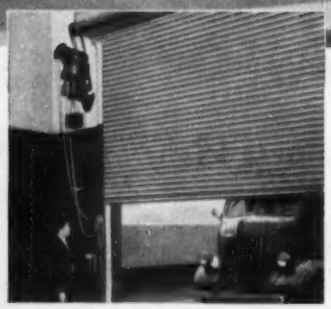
Kinnear Steel Rolling Doors

Smooth coiling upward action makes all floor and wall space fully usable at all times



With Kinnear Rolling Doors, all overhead space remains clear for hoist, crane or conveyor equipment or other superstructure. No floor or wall space is lost *inside or outside* of Kinnear Rolling Doors because they open straight upward. Light from overhead fixtures is never obstructed.

Kinnear Rolling Doors coil compactly, directly over the door lintel. Edges of the steel curtain are securely anchored in tracks from floor to lintel, insuring secure closure and extra protection against fire, intrusion and the elements. Kinnear's smooth upward action assures easy manual lift, chain or crank operation, and is ideal for time-saving electric control, using Kinnear Motor Operators with push-buttons at any number of convenient points. Kinnear Rolling Doors are built any size . . . easily installed in old or new buildings. Write today for full details.



* ***DOUBLE PROTECTION AGAINST THE ELEMENTS***

Kinnear Steel Rolling Doors are heavily galvanized (1.25 oz. of zinc per sq. foot, as per ASTM standards) to provide a long-lasting weather-resistant surface. In addition Kinnear Paint Bond, a special phosphate application, provides for easy, thorough paint coverage and lasting paint adhesion.

Records show that many Kinnear Rolling Doors have been in continuous service for 20, 30 and 40 years.

KINNEAR ROLLING DOORS
Saving Ways in Doorways

The KINNEAR Manufacturing Co.
FACTORIES:
1820-40 Fields Avenue, Columbus 16, Ohio
1742 Yosemite Ave., San Francisco 24, Calif.
Offices and Agents in All Principal Cities

MEN AND JOBS

in Los Angeles. Fred N. Finn, former assistant research engineer at the University of California's Institute of Transportation and Traffic engineering, has been named district engineer for the Central California District in Sacramento. C. J. Van Til, also formerly associated with the university institute, will be area engineer in the San Francisco office.

• **Construction chief cited**—Laurence B. Kuhns, chief construction engineer for Aluminum Company of America, has been awarded a Demers Medal by Rensselaer Polytechnic Institute. The award is given Rensselaer graduates in recognition of outstanding service to the institute and to the alumni association.

• **Army Engineer advancement**—Col. Richard W. Pearson, a veteran of 28 years service with the Corps of Engineers, has succeeded Col. L. H. Hewitt, retired, as division engineer of the New England Division. Colonel Pearson recently returned from Korea, where he commanded an engineering aviation brigade.

• **Wins Legion of Honor**—D. B. Steinman, internationally-known bridge engineer, has been decorated with the Legion of Honor by the French government. He was cited for professional achievements and contributions toward strengthening international relations.

• **Engineering student honored**—Robert P. Savoy has received the Robinson Engineering Award, given annually to the University of Akron's most outstanding senior in the college of engineering. The award is sponsored by The Robinson Clay Product Co., Akron.

• **Honorary doctor's degree**—Harry Barker, of the New York City engineering firm of Barker & Wheeler, has received the honorary degree of Doctor of Engineering from the University of Vermont. This year marks his 50th in engineering work.

• **Filling executive post**—Reynolds McHenry, former manager of Leland S. Rosener Engineers, has joined Swinerton & Walberg Co., San Francisco construction firm. He will serve on the executive staff.

• **Double duties**—Carlton F. Hartman has been appointed city planning engineer of Geneva, N. Y. He will also serve as superintendent of building and zoning.

PHOENIX "ROUNDUP"

IH Stages the Greatest Earthmoving Show on Earth

New, complete INTERNATIONAL line introduced to world-wide distributor organization at Industrial Power "Roundup"

Promptly at 9:00 A.M. recently, a barrage of aerial bombs exploded over the desert south of Phoenix, Arizona.

The explosions signaled the start of the greatest show ever presented by an individual heavy equipment manufacturer—the introduction of the new INTERNATIONAL Industrial Power line.

The International Harvester Industrial Power "Roundup" was a three-day presentation of more than 80 pieces of heavy earthmoving equipment, materials handling machinery, diesel and carbureted engines and power units in the new, expanded INTERNATIONAL Industrial Power line.

But the 612 INTERNATIONAL Industrial Power Distributors, their bankers and associates from the United States and 24 foreign countries got more than a first look at the big parade of IH Industrial Power.

They saw the answer of IH to the present and future requirements of one of the world's biggest industries—construction.

As an IH official told them, "There's no foreseeable end to the present heavy construction boom. We are determined to anticipate the demand and to build machinery necessary for the continual economic development of America and the free world."

HIGH ON A HILLTOP, Bill Hall and his new, 155 drawbar horsepower INTERNATIONAL TD-24 crawler tractor, command a view of IH's 4200-acre Phoenix Proving Grounds, site of the recent INTERNATIONAL Industrial Power "Roundup."

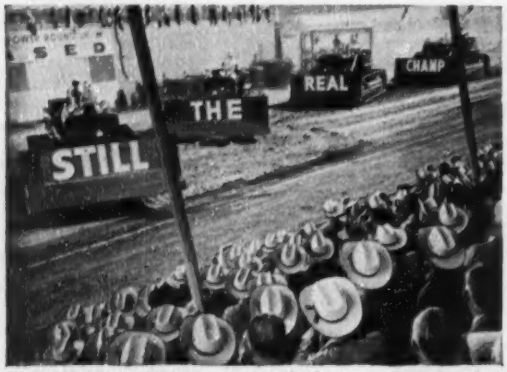
INTERNATIONAL HARVESTER

INTERNATIONAL

MAKES EVERY LOAD A PAYLOAD

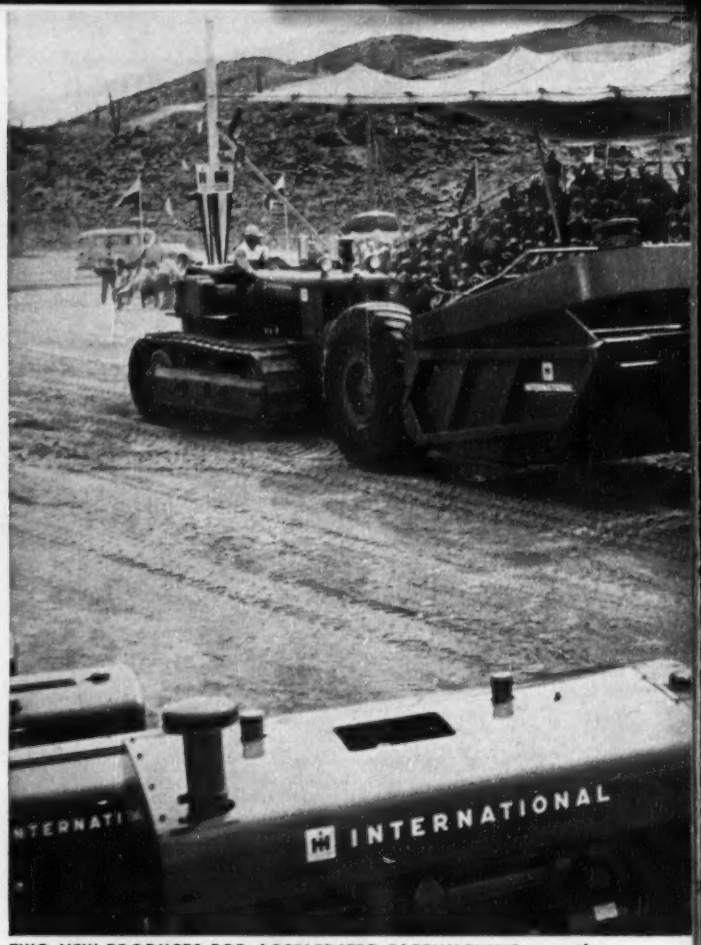
On the pages following, you will see the whole story, in pictures, of this great demonstration event. Just turn the page to start your own visit to the INTERNATIONAL Industrial Power "Roundup."

PHOENIX "ROUNDUP"



"ROUNDUP" AUDIENCE gets first look at new 155 drawbar horsepower INTERNATIONAL TD-24, world's most powerful crawler. The TD-24, with matched hydraulic or cable-controlled blade, handles the toughest "pioneering" jobs.

PROUDLY PROCLAIMING THEIR SUPERIORITY in their horsepower field, a trio of INTERNATIONAL TD-18A crawler tractors park in front of the "Roundup" grandstand for audience inspection and approval.



TWO NEW PRODUCTS FOR ACCELERATED EARTHMOVING pass the "Roundup" grandstand. Rubber-tired earthmover is the INTERNATIONAL 2T-75, with 18-yard heaped capacity and a top speed of nearly

"Every Load

At the Phoenix "Roundup", INTERNATIONAL showed its distributors a lineup of "phased" equipment specifically designed to meet the requirements of the construction industry.

Included in the long list of equipment were new crawler tractors, ranging in size from 20-ton mountain-moving giants to basement excavators; high-speed units that haul half a railroad car of earth each load;

LARGEST OF THE SPECIAL PURPOSE MACHINERY displayed at the "Roundup" was this INTERNATIONAL TD-24 crawler with matched Superior sideboom. TD-24 boom tractor will lift up to 45 tons.

READY TO TEST A NEW INTERNATIONAL 2T-75 is IH vice-president Harald T. Reishus. Instructions for the run are given by C. E. Jones, assistant sales manager. Holding stop watch at the right is sales manager I. P. Payne. Cactus in picture is famed Arizona saguaro.

25 mph. Pusher is the new 200 horsepower INTERNATIONAL TD-24 torque converter crawler tractor. These are the largest units in the line, which now includes more than 80 pieces of equipment.

a Payload"

a torque-converter tractor that operates as smoothly as chauffeur-driven limousine; equipment equally adept at stockpiling bags of concrete or crates of china; and power units capable of lighting a medium-size city.

By putting the proper piece of equipment on each phase of the earthmoving job, INTERNATIONAL Distributors can show their customers how production profits rise while operating costs fall.

THE NEW INTERNATIONAL TD-24 TORQUE CONVERTER gets a thorough going over by a group of distributors. With same dimensions as conventional TD-24, all equipment that fits the conventional TD-24 fits the torque converter model.

FAST-STEPPING GIANTS PERFORM FOR CROWD. Boss of the heavy earthmoving jobs is this largest crawler tractor-scraper combination manufactured today. Crawlers are the new 155 drawbar horsepower INTERNATIONAL TD-24s. Partner in this big earthmoving act is the new INTERNATIONAL B-250 a 27½-yard heaped capacity push-loaded scraper.

Turn the page for more "Roundup" news

CHARGE OF THE HEAVY BRIGADE. Part of the equipment used in the "Roundup" leaves the assembly "corral" for demonstration sites on IH's Phoenix Proving Grounds.

Demonstration—Cornerstone of IH Distributor Sales

In only one respect did "Demonstration Day" differ from any other day at the IH Phoenix Proving Grounds: grandstands were erected at each of 10 demonstration sites where distributors could see equipment in action.

Other than that, everything was the same. All equipment went through standard demonstrations and test runs.

Phoenix is only the first "torture" session for IH earthmoving equipment. Additional tests and demonstrations are conducted, year round, at other IH proving grounds and on actual jobsites.

A lengthy and expensive process, but one that assures contractors of this fact: INTERNATIONAL Industrial Power means more power, more speed, greater durability and less operating expense on any earthmoving or heavy construction job.

Your INTERNATIONAL Industrial Power Distributor will gladly arrange a demonstration of the model in the new, complete INTERNATIONAL line "sized" for your job. Let him prove that putting INTERNATIONAL Industrial Power equipment on the job puts more profit in your pocket.

INTERNATIONAL HARVESTER COMPANY, CHICAGO 1, ILLINOIS

TAKING ADVANTAGE OF A COFFEE BREAK are (l to r) Governor Howard Pyle of Arizona, "Roundup" host, Harald T. Reishus, vice-president, International Harvester and John L. McCaffrey, president.

INTERNATIONAL HARVESTER

INTERNATIONAL®

MAKES EVERY LOAD A PAYLOAD

OBITUARIES

Clarence Blakeslee dies; head of contracting firm

Clarence Blakeslee, 91, chairman of the board of C. W. Blakeslee & Sons Co., pioneering contracting firm of New Haven, Conn., died in that city June 26.

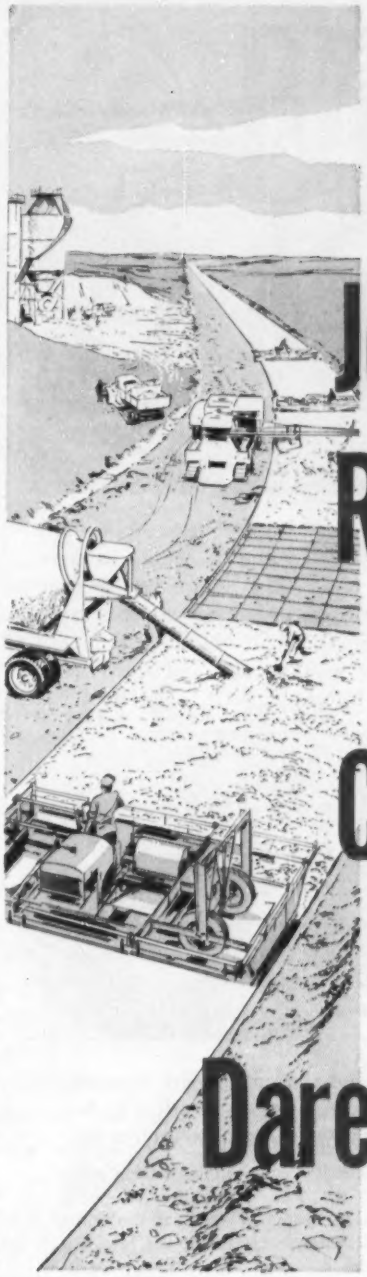
He was a graduate of Sheffield Scientific School in 1885; since 1900 Mr. Blakeslee had been with the firm organized by his father. He also took an active part in the affairs of the Yale Corporation, having been a member of its building committee during the years of the university's great expansion of its physical plant, 1925-1931.

The Blakeslee firm was one of the major contractors on the Catskill water-supply system for New York City.

Frank Arthur Johnson, 65, who retired April 20 as the principal structural engineer for the California Division of Architecture, died in Sacramento, June 21. He designed the structural work for the State Employment Building now under construction in Sacramento, as well as for many of the buildings constructed by the state in recent years. He had completed 21 years with the Division of Architecture at the time of his retirement.

William Otis Hotchkiss, 75, president emeritus of Rensselaer Polytechnic Institute, died June 20 in Scarsdale, N. Y. Dr. Hotchkiss was graduated from the University of Wisconsin in 1903 and served as chairman of the Wisconsin Highway Commission for two years. He was a former president of the Michigan College of Mining and Technology.

Edward Hyatt, 65, state engineer in California from 1927 until 1950, died in Sacramento, June 17. Since his retirement Hyatt had been a consultant for the Sacramento Valley Water Users Committee. Credited with a leading role in the development of the California Central Valley Project, Hyatt began with the U. S. Geological Survey after his engineering education at Stanford University. Between 1912 and 1914 he was in charge of irrigation in the San Joequin Valley for the San Joequin Light and Power Corp. In 1914 he was named engineer for the State Highway Commission. Two years later he transferred to the State Water Commission. In 1922 he was appointed deputy chief of the Division of Water Rights and two years later was promoted to chief.



For roads that last, use

Job-Mix or Ready-Mix

air-entrained

Concrete

made with

Darex AEA

DAREX AEA helps you maintain your designed yield, helps you meet specifications. It is the world's most widely used brand of air entraining agent. Not a by-product, it is specifically formulated to give you close control of air content. Concrete made with Darex AEA places easier, finishes faster and better, has finer surface texture, is more durable.

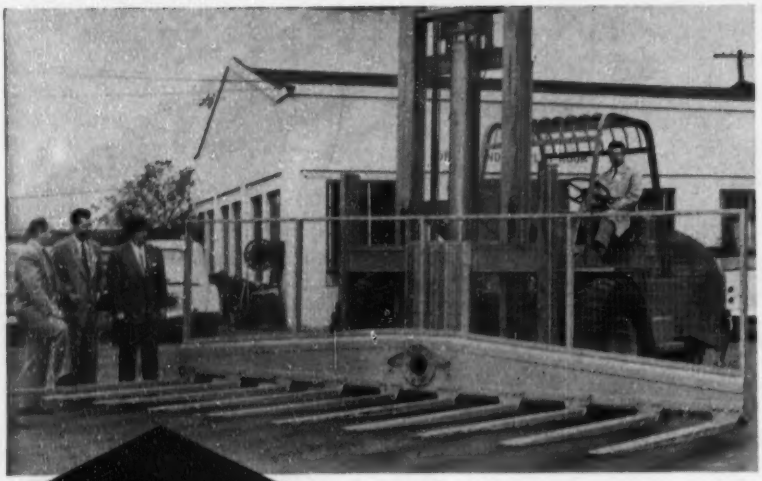
D A *Construction Specialties Division*

DEWEY and ALMY Chemical Company

Cambridge 40, Mass.

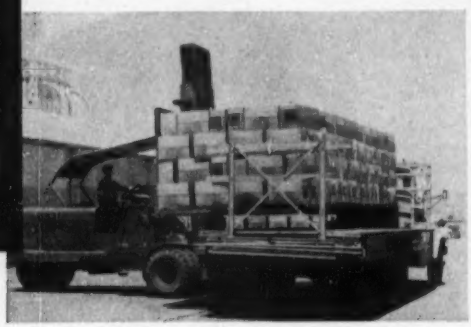
OFFICES OR SUBSIDIARIES IN Buenos Aires, Chicago, Copenhagen, London, Melbourne, Milan, Montevideo, Montreal, Naples, Paris, San Leandro (Calif.), São Paulo, Tokyo.

DARASEAL concrete curing compound • DARACONE masonry water repellent • DARALITE for lightweight aggregate



a Truckload per lift... with a 10 ton bite

Unload a full truck of lettuce boxes at a time! . . . they said it couldn't be done. So . . . McDonough Steel did it. McDonough designed a giant fork that for months has handled king-sized loads day in and day out with an ease and speed never known before.



Here is the labor saving, cost cutting giant McDonough fork in action. Its rugged forks (made of hollow steel for extra strength with less weight) are pictured unloading 19,920 pounds in one tremendous bite.

The capacity of the fork is limited only by the load the lift truck can carry. The fork unit's total weight is only 3980 pounds. Uneven weight distribution poses no problem for the giant fork, because McDonough engineering has taken into account the changing needs of the jobs to be handled. Fully adaptable to any type lift truck, the McDonough giant fork can handle a wide variety of tasks, and pay for itself in time and labor savings in short order. It sharply reduces the dead time-loss of trucks waiting to be unloaded.

The giant fork described above is another example of the engineering know-how at McDonough serving the needs of the food processing industry. For any type of steel fabricating and design, see The McDonough Steel Co.

A pictorial booklet showing many of the products we have manufactured, and our complete plant facilities is yours for the asking. There is no obligation. Write today for your copy.

McDonough Steel Co.

Founded January 1st 1924

ENGINEERS - FABRICATED STEEL PRODUCTS

800 - 75th AVENUE OAKLAND 21, CALIFORNIA TRINIDAD 2-1300

LEGAL

General contractor liable for acts of subcontractor

An action was brought by a factory owner against the general and subcontractor for damage done to an expensive piece of machinery damaged during the course of the installation of the machinery.

The contract provided that the general contractor would be liable to the factory owner for any breach of its contract to install the machinery. The court held that the fact that the damage to the machinery was caused by the negligence on the part of the subcontractor, did not release the general contractor from liability to the factory owner.[1]

(1) McLouth Steel Corp. v. Mesta Machine Co., 116 F. Supp. 689, U. S. District Court of Pennsylvania, Oct. 6, 1953.

Damages resulting from defective construction

As a general rule, where the contractor fails to comply in detail with his contract, but does in substance comply therewith, the owner must pay the contract price less such amount as he may reasonably expend to effect the completion of the work.

Where the work fails to measure up to the specifications of the contract, and nothing can effectively remedy the existing conditions, and the owner is forced thereby to make alterations in his plans in order to acquire a usable structure, he is not obligated to settle with the contractor in conformity with the doctrine of substantial performance, unless he desires to use what the contractor has created.

The owner may say to the contractor that nothing that he may do will produce the building which was contemplated by the plans, and that, therefore, the contractor will be required to remove entirely what he created. On the other hand the owner may say to the contractor that what he had erected was not the structure called for by the plans and specifications, but that, nevertheless, by effecting changes in his plans, he can use what the builder has constructed. If he decides to follow this alternative, he is liable to the contractor for what has been erected, less the amount it may cost the owner to obtain a usable building, even though the construction is not such as was contemplated by the plans.

"The damage for the breach of a building contract where the owner de-

(Continued on page 87)

185,000 square feet of fully usable space at a total cost of only $2.40 per square foot! The Coleman Company, Inc. of Wichita, Kansas chose Butler to solve their expansion problem—saving 47% over conventional buildings.

Build for life...build for less with BUTLER steel buildings

Engineered to modern management needs in a rapidly changing economy—that's why Butler steel buildings give you *more* than mere shelter and workspace. They are a *new* profit-tool for management! Butler's versatile buildings can be modified to new purposes, new installations, new plant layouts—or moved to new locations—quickly and inexpensively. They can be erected in one-half the time required for commonly used materials. Butler buildings equal or exceed conventional structures—in unobstructed clear-span interiors—in snug weather-tight protection for extremes of heat and cold—in appealing good looks, and unbeatable economy!

Yes, you build better *for less.* The Coleman Company economy story illustrated above is a common experience of Butler customers. Savings on the original financing—or investment of reserves, will make a real difference in the profit position of your organization from the very start. Lower maintenance costs and depreciation of Butler galvanized or aluminum sheeting will pay you an extra yearly dividend.

Butler buildings are an important part of your profit picture. Write today for full details and the name of your nearest Butler dealer.

Here is why BUTLER is a better buy

Every Foot of Floor Space is Usable

There are no interior posts or columns to waste space and create work-slowing "bottlenecks." Rigid-frame construction also shrinks maintenance costs . . . extends building life.

Fast Erection . . . Easy Expansion

Precision-punched and dimensioned bolt holes speed erection—simplify expansion or dismantling and moving. Galvanized bolts, with Neoprene rubber washers, lock deep-corrugated sheets firmly to the sturdy frame.

Weatherproof Protection

The one-piece, die-formed roof ridge eliminates ridge roll—helps to make the building leakproof and weather-tight.

Triple-Strength Corrugated Sheets

Butler sheeting with deep-formed corrugations on 12-inch centers, is three times as strong as ordinary corrugated sheets. Overlapping corrugations bolt tightly together for maximum strength and weather protection. Your choice of steel or aluminum sheeting.

Attractive Curved Eaves

The neat, die-formed eaves—which bolt to the roof sheets—add to the appearance of Butler steel buildings...increase the strength of the eaves . . . help insure weather-tightness.

Weather-sealed Windows and Base

Where corrugated sheets meet windows or the foundation, they are tightly crimped for a snug fit that keeps out snow, moisture and rodents.

BUTLER® STEEL PRODUCTS

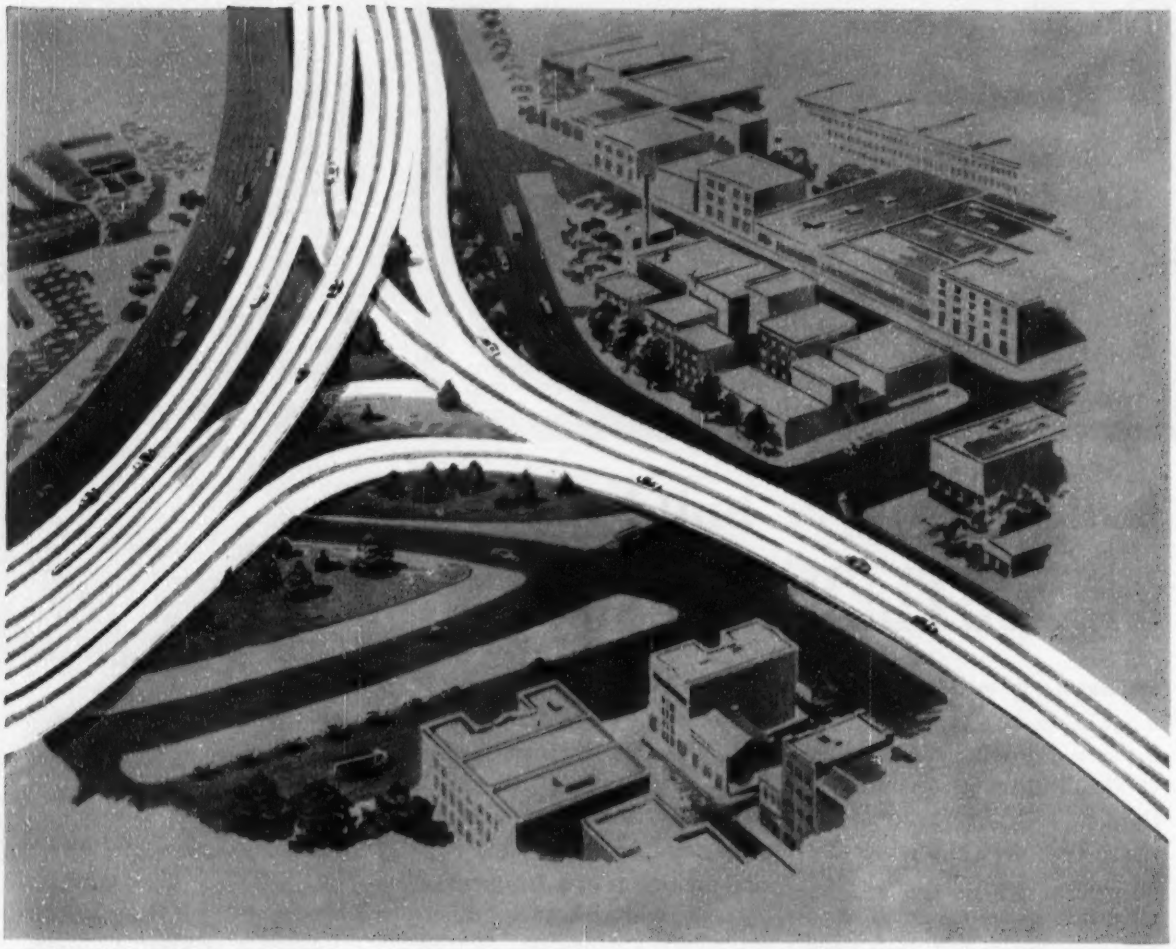
BUTLER MANUFACTURING COMPANY

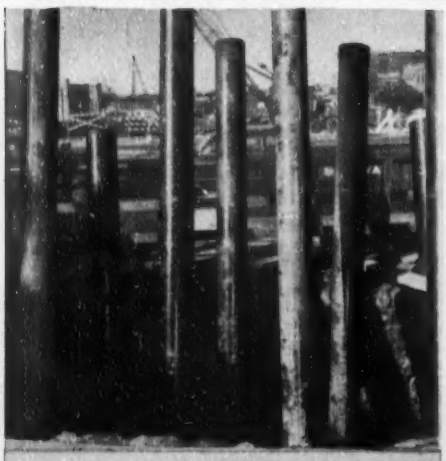
7418 East 13th Street, Kansas City 26, Missouri
918 Sixth Avenue, S. E., Minneapolis 14, Minnesota
1028 Avenue W, Ensley, Birmingham 8, Alabama
Dept. 18, Richmond, California

Manufacturers of Oil Equipment • Steel Buildings • Farm Equipment • Cleaners Equipment • Special Products

Factories located at Kansas City, Mo. • Birmingham, Ala. • Richmond, Calif. • Galesburg, Ill. • Minneapolis, Minn.

Brooklyn traffic "riding high"





A ROW of partially driven NATIONAL Seamless Steel Piles.

on the Prospect Expressway

...thanks to NATIONAL Seamless Steel Piling

APPROXIMATELY 400 tons of 12¾" OD x ½" wall NATIONAL Seamless Steel Piles were used in the construction of Brooklyn's Prospect Expressway. Almost two miles long, the new $22,000,000 expressway will join Gowanus Parkway to Ocean Parkway.

NATIONAL Seamless Steel Piles were used, not only because of their outstanding performance under load, but because they are actually *low in cost* per ton of load carried. Just look at these advantages:

HIGH LOADING CAPACITY—The metal in steel pipe piles is confined to the periphery of a circle, thus furnishing maximum utilization of material and maximum strength from the structural point of view. Filling the pipe with concrete further adds to its bearing capacity.

FEWER PILES REQUIRED FOR GIVEN LOAD—The very heavy loads which NATIONAL Seamless Steel Piles can sustain make it possible to design footings with fewer piles than with any other type of pile. Reduction in over-all footing size is particularly advantageous where space is limited—it offers less interference with existing utilities and other underground construction.

MORE EFFICIENT, FASTER DRIVING—The structural strength of NATIONAL Seamless Steel Piles permits the use of large hammers and hard driving that would destroy any other type of pile. There is no brooming or shattering to be concerned with, more energy of the hammer is transmitted into useful work, and driving is faster. Splicing, for extra-long piles, is quickly and easily done by means of internal sleeves.

PENETRATE WHERE OTHER PILINGS FAIL—Closed end steel pipe piles can be driven home despite boulders, cribbing, riprap, etc., where no other type of driven pile could go through. And open end piles go through obstructions under almost impossible conditions.

POSITIVE ASSURANCE OF RESULTS—Simply by lowering an electric light into the hollow pipe, alignment and condition of the pile can be continuously checked. When using open end pipes, the actual bearing area can be examined and an even bearing assured by churning or spudding through the pipe.

Invite NATIONAL engineers to discuss your foundation problems with you. Let them show you how this service-tested piling has saved time and money in many of the country's most exacting projects. You'll find their cooperation helpful regardless of the size and difficulty of the job.

ROW OF DRIVEN STEEL PIPE piles, not yet cut to uniform length. Pile driver is seen in background. Below are steel piles cut to proper lengths and filled with concrete.

NATIONAL TUBE DIVISION, UNITED STATES STEEL CORPORATION, PITTSBURGH, PA.
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

WALLS WITHOUT WELDS

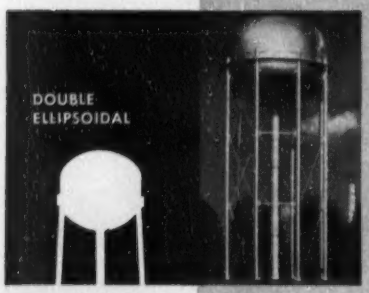
USS **NATIONAL *Seamless* PIPE AND TUBES**

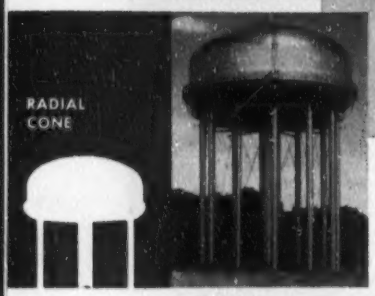
UNITED STATES STEEL

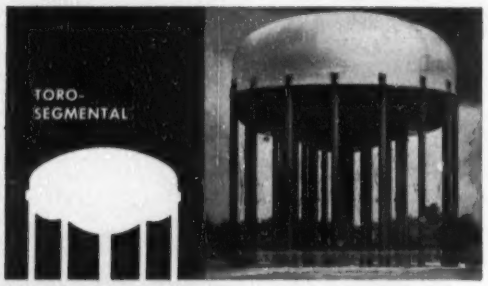
PITTSBURGH • DES MOINES

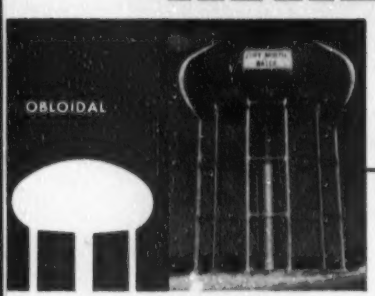
designs, fabricates and erects

every type of ELEVATED STEEL TANK for every WATER STORAGE need









The widely-varying water storage requirements of American communities are covered effectively by the broad range of Pittsburgh-Des Moines Elevated Steel Tanks available today. For every consideration of capacity, appearance, service, and cost, a corresponding answer is found in our standard and special elevated tank construction. Consult us on your water storage problems—our more than fifty years of experience in this field are at your service, without obligation.

Send for our helpful 20-page brochure, "Modern Water Storage in Elevated Steel Tanks" — free, complete, informative!

PITTSBURGH • DES MOINES STEEL CO.

Plants at PITTSBURGH, DES MOINES and SANTA CLARA

Sales Offices at:

PITTSBURGH (25) ..... 3416 Neville Island	DES MOINES (8) ..... 917 Tuttle Street
NEWARK (2) ..... 217 Industrial Office Bldg.	DALLAS (1) ..... 1221 Praetorian Bldg.
CHICAGO (3) .. 1220 First National Bank Bldg.	SEATTLE ..... 524 Lane Street
LOS ANGELES (48) ..... 6399 Wilshire Blvd.	SANTA CLARA, CAL. ..... 623 Alviso Road

STEEL RESERVOIRS

If you are interested in water storage at natural elevations, write for our illustrated "Steel Reservoirs" Bulletin, sent gladly on request.

rives some benefit from the defective construction is usually the cost of repairing the defective work."[1]

(1) Montague v. Milan, 67 So. 2d 351, Court of Appeal of Louisiana, June 8, 1953.

Rights of subcontractors

A litigation involved a dispute between a builder and two electrical subcontractors in connection with the wiring of four houses being erected by the builder. Both subcontractors brought the actions against the builder for amounts that they claimed were due them under the contracts.

The builder counterclaimed against the first subcontractor, claiming that in the event that the second subcontractor obtained a judgment against him that he should receive a judgment against the first subcontractor for the same amount since what he would have to pay the second subcontractor resulted from damages that he had sustained by breach of the contract by the first subcontractor.

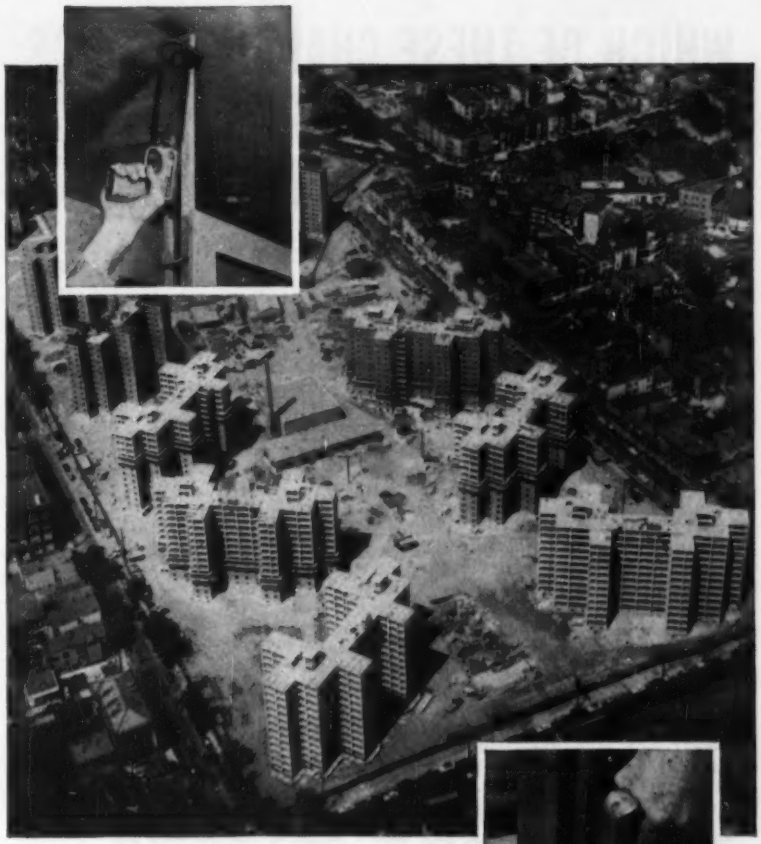
The actions were predicated on the fact that at the time the first subcontract was entered into, the subcontractor was not informed nor did the proposal for bids or the contract indicate that the builder intended to install air-conditioning units that would require a higher amperage service than that called for by the contract. When the subcontractor first learned of this situation, he asked the builder to pay him an additional sum to cover the increased cost of doing the work. The builder refused to pay for such increased cost and the subcontractor thereupon stopped doing the work.

The court found as a fact that the first subcontractor had substantially performed his contract except as to certain items, performance of which was prevented by the acts of the owner and allowed him a recovery of the amount due under the contract.

The builder contracted with the second subcontractor to complete the work. After this second subcontractor had been working on the job for about two months, the builder told him to quit the job as the original subcontractor was coming back to complete the job. The second subcontractor was employed on the basis of an oral contract that he would be paid for labor and material plus "a reasonable profit."

The builder refused to pay the second subcontractor on the ground that he claimed that this subcontractor had made a deliberate miswiring of a meter box in a fit of anger after he was discharged from the job. The court found as a fact that this alleged wrongful

(*Continued on page 88*)



Ramset makes fast work of installing 10,000 doors

Speed and economy resulted from the use of RAMSET SYSTEM to anchor 10,000 interior doors top and bottom in the low-rent housing project at Newark, N. J.

The struts and frames were guided into proper position, and anchored to the poured concrete ceiling and floor with a RAMSET JOBMASTER Fastening Tool and Tru-Set Fasteners. Less than a minute was required to provide a firm anchor.

Similarly, high-speed, low-cost RAMSET SYSTEM will solidly fasten almost anything into even the hardest concrete or mild structural steel up to 1" thick. Ask your RAMSET dealer to demonstrate how this most modern method will reduce costs and complete the work faster. Or, write us, for details in *Specification Manual*.

Ramset Fasteners, INC. Ramset Division, Olin Industries, Inc.
12107 BEREA ROAD • CLEVELAND 11, OHIO

FIRST IN POWDER ACTUATED FASTENING

AN Olin PRODUCT

WHICH OF THESE CHARACTERISTICS ARE ESSENTIALS ON YOUR REMOTE CONTROL JOBS?

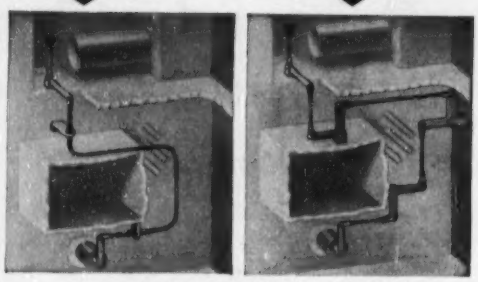
Accuracy . . . High Load Capacity . . . Adaptability . . . Freedom from Trouble . . . Long Life . . . Flexibility . . . these are some of the qualities of **ACCO TRU-LAY PUSH-PULL FLEXIBLE CONTROLS** that have made it possible to improve the operation of literally hundreds of mechanical products (list on request). Full description of this versatile REMOTE CONTROL is given in our **DATA FILE** available for your further study.

ACCURACY is inherent in the basic design, and in the standards of quality and precise dimension that control the manufacture of TRU-LAY PUSH-PULL CONTROLS. These are precision products, not gadgets.

VERSATILITY of this fine remote control can best be illustrated by citing some of the jobs it handles well . . . **HOT** jobs on jets and industrial furnaces . . . **COLD** jobs down to —70° F. . . . **WET** jobs (the conduit can be completely immersed) . . . **DIRTY** jobs . . . **ABRASIVE** jobs . . . **CORROSIVE** jobs . . . **HEAVY, TOUGH** jobs up to 1,000 lbs input . . . **LIGHT DUTY** jobs . . . **REMOTE** jobs 150 feet or more from the control point . . . these units are frequently and successfully used in conjunction with electric, hydraulic and air controls . . . are thoroughly effective under almost any operating condition.

"SOLID as a rod but FLEXIBLE as a wire rope" aptly describes TRU-LAY PUSH-PULL CONTROLS. This *flexibility* provides positive, remote action whether anchorages are fixed or movable . . . it damps out noise and vibration—protects delicate instruments . . . it permits ease of handling and shipping even when assemblies are 100 or 150 feet long . . . it avoids the risk of damage always present with solid tubular controls that must be preformed to position . . . and flexibility greatly simplifies installation of controls by reducing the number of working parts and by making it possible to snake around obstructions. . .

to give you this simple and effective assembly ⬇ **. . . rather than this complex (and expensive) series of linkages** ⬇



ADAPTABILITY to all sorts of mechanical situations explains, in large measure, the wide-spread application of TRU-LAY PUSH-PULLS. Standard anchorages, fittings and heads have been designed that meet requirements on approximately 80% of the installations. Simple modifications of these standards, or minor changes in your own design, cover almost every special situation. Our engineers have the know-how on such matters.

FREEDOM FROM TROUBLE and **LONG LIFE** are assured even under exceptionally adverse operating conditions because of such things as . . . full protection of the flexible, inner, working member by the tough flexible conduit . . . lubrication of the inner, working member *for life* during assembly . . . seals that keep moisture, dust and other foreign matter out of the unit . . . cold swaging of fittings that makes them integral parts of the control unit. (Full construction details in our **DATA FILE**). We have never heard of a TRU-LAY FLEXIBLE PUSH-PULL CONTROL wearing out in normal service.

Whether your interest is in a single application of this versatile PUSH-PULL CONTROL, or in its inclusion as a component of the product you manufacture, the six booklets and bulletins in this **DATA FILE** will answer your further questions, and will also provide you with the means of defining to us the application you may be interested in.

DATA FILE

ACCO ***WRITE for a copy, without obligation***

AUTOMOTIVE and AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE

TRADE MARK

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929-F Connecticut Ave., Bridgeport 2, Conn.

LEGAL

act did not involve any danger to the houses, and did not delay the completion of the work and that the defect in the work was trivial and was remedied at a cost of $30.81. The court deducted this sum from the amount due the second subcontractor. The judgment in favor of both subcontractors was affirmed on appeal.[1]

(1) Shapiro, Inc. v. Bimlich et al., 101 A. 2d 890, Municipal Court of Appeals, District of Columbia, Jan. 7, 1953.

Ignored contract provisions can not be enforced

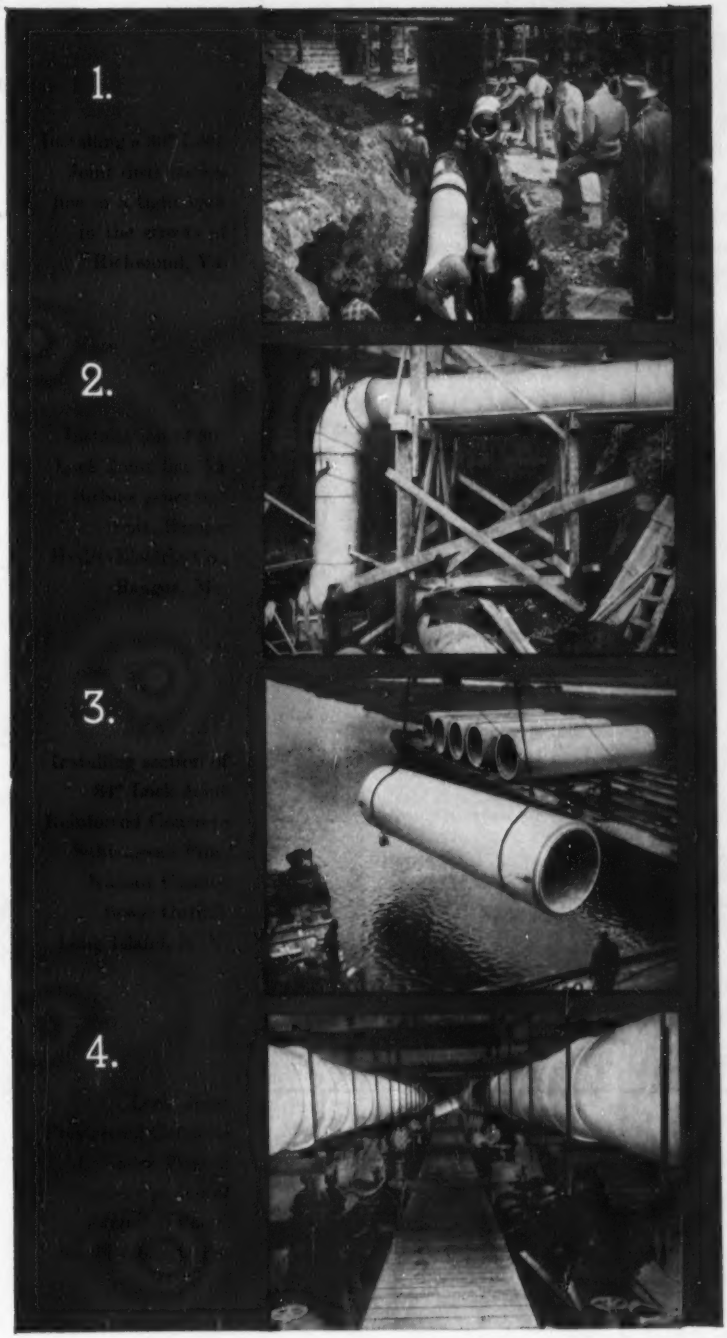
Where a contract provided that change orders were to be made in writing and neither party insisted upon compliance with the terms of the contract during the course of the prosecution of the work, such conduct constituted a waiver of the contract provision.[1]

The court, in its opinion, stated: "The record includes considerable testimony indicating that change orders were frequently handled without regard to the method of procedure demanded by the contract. It indicates that plan changes often were requested verbally or even by telephone, although the contract required that they be written, except in the case of minor changes or emergency. The record further indicates that the architect never prescribed the manner in which the contractor was to keep accounts of the costs of change orders as the contract authorized him to do. It is our opinion under the facts and cirsumstances here that National [owner] is not now in a position to urge that Standard's [contractor's] failure to conform to these provisions precludes its recovery. Meyer v. Berlandi, 53 Minn. 59, 54 N.W. 939; Walberg v. Jacobson, 143 Minn. 210, 173 N.W. 409; Evensta v. St. Olaf College, 173 Minn. 360, 217 N.W. 348."

In the above case the contractor brought an action to recover for the increased cost of the work as a result of a change order. The owner claimed that the contractor had not obtained a written change order as called for by the contract and that he had failed to keep a record of the cost resulting from the change as called for by the contract. As has been pointed out above, the court held that the parties by their conduct had waived the contract procedure.

(1) Standard Construction Co. v. National Tea Co., 62 N.W. 2d 201, Supreme Court of Minnesota, Dec. 11, 1953.

(These summaries of court decisions are prepared by J. Vernon Werbin, New York attorney and civil engineer.)



LOCK JOINT

the multi-purpose pressure pipe

Lock Joint Concrete Pressure Pipe has long been recognized as the ideal, high capacity pipe for water supply lines, but its variety of types and designs has also permitted successful use in the following:

- WATER DISTRIBUTON SYSTEMS
- INDUSTRIAL PLANT INSTALLATIONS (Supply, circulating and cooling systems)
- SUBAQUEOUS INSTALLATIONS (Water intakes, siphons and sewer outfalls)
- WATER WORKS PLANTS (Pumping and treatment plant piping)
- SEWAGE OPERATIONS (Force mains and plant piping)

THESE are some of the major services for which Lock Joint Concrete Pressure Pipe is ideally suited. So, if your pressure pipe problem involves pipe 16" in diameter or larger, call on Lock Joint – the low cost, high capacity, long lasting multi-purpose pipe.

SCOPE OF SERVICES—Lock Joint Pipe Company specializes in the manufacture of Reinforced Concrete Pressure Pipe for Water Supply and Distribution Mains 16" in diameter or larger, as well as Concrete Pipes of all types for Sanitary Sewers, Storm Drains, Culverts and Subaqueous Lines.

LOCK JOINT PIPE COMPANY

Established 1905

P. O. Box 269, East Orange, N. J.

PRESSURE PIPE PLANTS: Wharton, N. J., Turner, Kan., Detroit, Mich., Columbia, S. C.

SEWER & CULVERT PIPE PLANTS:

Casper, Wyo. • Cheyenne, Wyo. • Denver, Col. • Kansas City, Mo. • Kennett Square, Pa. Valley Park, Mo. • Chicago, Ill. • Rock Island, Ill. • Wichita, Kan. • Kenilworth, N. J. Hartford, Conn. • North Haven, Conn. • Tucumcari, N. Mex. • Oklahoma City, Okla. • Tulsa, Okla. • Beloit, Wis. • Henrietta, N. Y. • Hato Rey, P. R. • Ponce, P. R. • Caracas, Venezuela

LOCK JOINT
Reinforced Concrete
PRESSURE PIPE

MATERIALS AND LABOR PRICES

Market quotations on construction materials and wage rates reported monthly by ENR correspondents
August Materials, and Labor Prices will appear in August 5, 1954 issue

CEMENT, AGGREGATE, READY-MIXED CONCRETE—F. O. B. CITY

	PORTLAND CEMENT* Per bbl. C/L lots cash, dis. not deducted			SAND AND GRAVEL Per ton, carload lots Gravel,	Gravel,		CRUSHED STONE Per ton, carload lots		CRUSHED SLAG Per ton, carload lots, f.o.b. plant		CONCRETE BLOCK 8 x 8 x 16-in.; truckload del.; per block		CONCRETE Ready Mixed 1:2:4: over.
	Paper	Bulk	Mortar	1½ in.	¾ in.	Sand	1½ in.	¾ in.	1½ in.	¾ in.	Sand grav.	Lt. wgt. agg.	50 c.y., del.
Atlanta	$3.87	$3.56	$3.40	$2.075	$2.075	$1.83	$2.20	$2.20	$1.99	$1.99	$0.21	$0.21	$12.06
Baltimore	3.90	3.60	3.53	2.60‡a	2.60‡a	2.00‡a	2.75‡a	2.80‡a	2.65‡a	2.60‡a	.17	.17a	11.45
Birmingham	3.47	2.75c	....	2.25n	2.25n	2.08n	2.64	2.64	1.35	1.45	.165	.165	11.60
Boston	4.16	3.84	3.96	2.50a	2.50a	2.50a	1.50a	1.60a	.....	.....	.215	.245a	12.00k
Chicago	3.63	3.32	3.35	3.25‡b	3.25‡b	3.65‡b	3.25‡b	3.25‡b	2.25‡	2.25‡	.23	.23b	11.70/11.94
Cincinnati	3.76	3.55	3.55	2.19‡c	2.24‡c	2.24‡c	2.54‡c	2.54‡c	.....	.....	.205	.225a	10.95
Cleveland	N. A. in C. L.	3.19e	....	2.05f	1.85f	1.65	4.10a	4.10a	3.35‡	3.15‡	.....	.22	14.40d
Dallas	3.15	2.85	2.90	2.18	2.28	1.84	2.22	2.38	.....	.....	.11g	.2675	9.40
Denver	4.24	3.94	4.24	1.85	2.00	1.20	.....	.....	.....	.....	.23	.255a	10.50
Detroit	3.72	not avail.	3.50	4.50‡b	4.50‡b	4.00‡b	3.75‡	3.75‡	4.25‡	4.25‡	.21	.21a	12.70f
Kansas City	3.52	3.22	3.30	1.85‡	1.85‡	1.50‡a	2.00‡a	2.00‡a	.....	.....	.21a	.24c	12.00j
Los Angeles	4.72a	4.20a	5.20	2.16a	2.36a	2.11a	2.11a	2.21a	.....	.....	.14fm	.248m	11.88h
Minneapolis	4.10h	3.79h	3.71	2.55‡ag	2.55‡ag	1.50‡ag	2.75‡ag	2.75‡ag	.....	.....	.19i	.....	12.75ik
Montreal	3.16ac	2.95ac	....	3.00e	3.00e	2.25	1.65ij	1.90ij	.....	.....	.20	.20a	10.55eb
New Orleans	3.50	3.17	3.48	2.32	2.32	1.82	....	....	1.05	1.25	.275	.....	12.90
New York	4.01	3.70	3.53	2.85bk	2.85bk	1.90bk	2.70bl	2.70bl	.....	.....	.....	.....	14.05an
Philadelphia	3.58/3.97‡	3.27/3.64‡	3.58/3.63‡	2.75‡*p	2.75‡*p	2.15‡*p	2.30‡	2.40‡	2.00	1.90	.22/.25	.....	12.50de
Pittsburgh	3.47	3.19	3.47	2.25‡	2.25‡	2.20‡	2.60‡	2.60‡	2.15	2.15	.22d	.22	13.00
St. Louis	3.40/3.63b	3.09/3.35b	3.25/3.42	2.90am	2.90am	2.30/2.90am	1.70j	1.70j	1.50	1.50	.22	.28ci	11.40
San Francisco	3.67	3.27	....	2.07	2.07	2.17	2.22	2.22	.....	.....	.....	.28cl	12.15c
Seattle	4.80a	3.55a	5.95k	3.50‡bm	3.50‡bm	3.50‡bm	4.00‡bm	4.00‡bm	.....	.....	.25f	.3325f	12.30f

‡ Delivered. * Prices incl. dealers discount except as noted.
CEMENT: *a* Subj. to 10¢ dis. *b* Less 2% for cash. *c* CL price dealers discount not incl. *e* Truckload lots, destination price. *h* LCL. SAND, GRAVEL, STONE & SLAG: *a* Truck lots. *b* Per cu. yd. *c* 5 tons or more. *e* ¼". *f* Pea gravel. *g* Less 5% for cash. *k* Less than 5 tons. *l* Sales tax incl. *j* F.o.b. quarry. *k* Barge lots asd. *l* F.o.b. scow Hudson river. *m* Less 2% for cash. *n* F.o.b. cars. *o* 1-3 mi zone. *p* Add 10¢ for ea. add'l mi zone.
CONCRETE BLOCK: *a* Cinder. *b* Waylite. *c* Haydite. *d* Celocrete. *e* 5¼ x 8 x 12 in. *f* 8 x 4 x 16. *g* F.o.b. truck at job. *i* Less 2% for cash. *j* Less 1% for cash. *l* F.o.b. plant San Rafael. *m* F.o.b. yard
READY MIXED CONCRETE: *a* 5 cu. yds. or over del. Man. *b* 25 cu. yds. or more. *c* 10-100 cy. brackets. *d* 1-3 mi. zone. *e* 2,000 lb comp. *f* 2500 lb. comp. *h* Less 50¢ for cash. *i* 5% off for cash. *j* 2% off for cash. *k* Sales tax included. *l* 1:2½:4. *m* F.o.b. yard. *n* Plus escalator clause. *o* Add 15¢ for ea. add'l 3-mi zone.

CASH DISCOUNTS CEMENT to Contractors: Truck delivery, 2% for cash on 10th of month; on carload deliveries, no trucking, same as dealer cash discount 10¢ per bbl. for payment within 15 days of date of invoice. Subject discount 10¢ per bbl. 20 days in Montreal.

CURRENT MAXIMUM PRICES AT CEMENT MILLS

Charge for bags not included. For paper bags add 30¢ per bbl., not refundable.

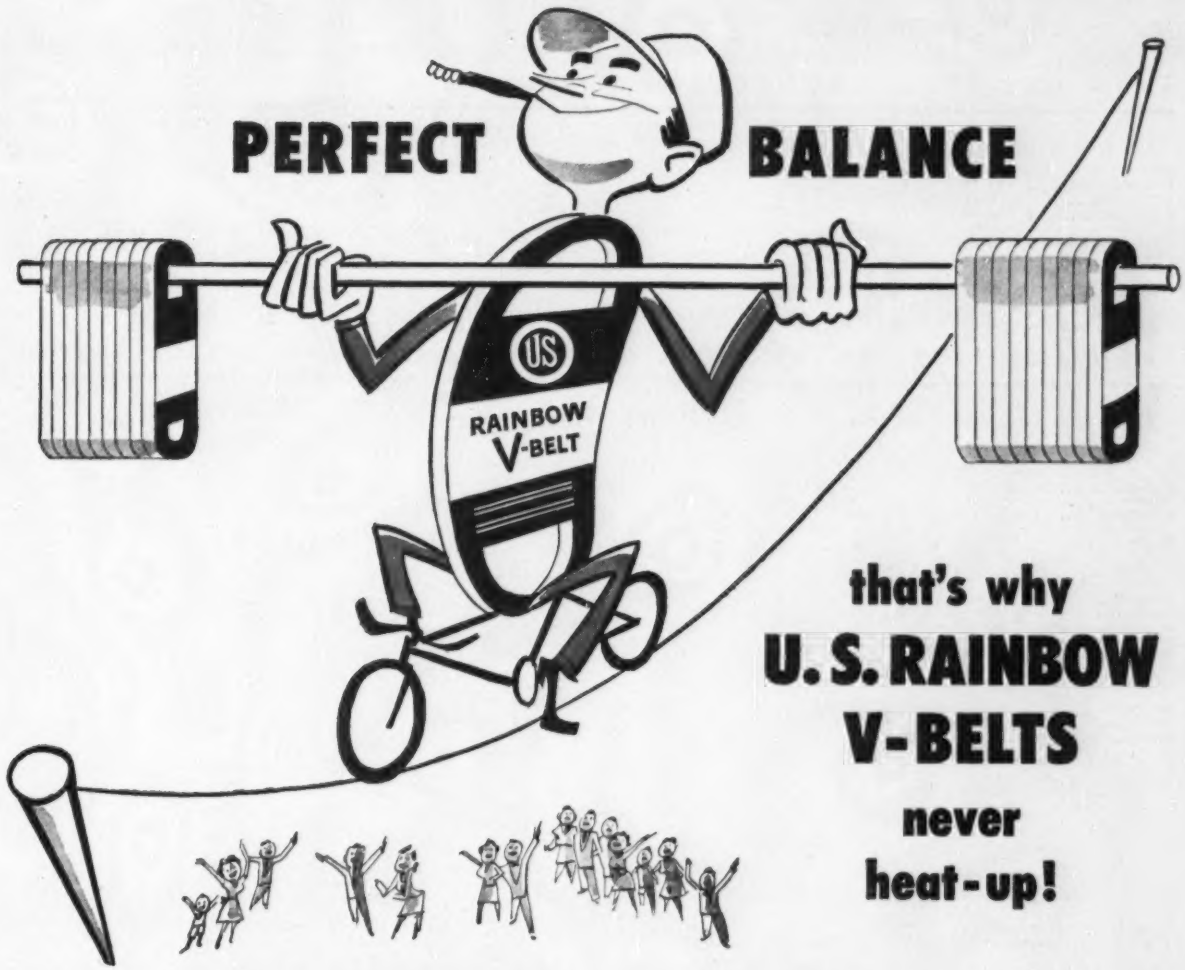
	Bulk		Bulk		Bulk		Bulk		Bulk
Richard City, Tenn.	$2.90†	Buffington, Ind	$2.85†	Stockton, Minn.	$2.95†	Muskegon, Mich.	$3.00†	Toledo, O.	$2.90†
Clinchfield, Ga.	2.90†	Independence, Kan.	2.80†	Leeds, Ala.	2.75†	Saginaw, Mich.	2.90†	Milwaukee, Wis.	3.05†
Kingsport, Tenn.	2.90†	Hannibal, Mo.	2.85†	Duluth, Minn.	2.95†	Wyandotte, Mich.	2.90†	Green Bay, Wis.	3.05†
West Des Moines, Iowa	2.95†	Northampton, Pa.	2.75†	Hudson, N. Y.	2.75†	Buffalo, N. Y.	2.85†	Ironton, O.	2.75†
Nazareth, Pa.	2.75†	Universal, Pa.	2.95†	Alpena, Mich.	2.80†	Oswego, N. Y.	3.00†	Montreal City	2.66
Bath, Pa.	2.75†	Waco, Tex. (+ 10¢ tax)	2.60†	Detroit, Mich.	2.90†	Cleveland, O.	2.90†	W. Winfield, Pa.	2.95†

† *Prices to hold for third quarter of* 1954.

PAVING BRICK, BLOCK, ASPHALT, ROAD OILS—F. O. B. CITY

	PAVING BRICK AND BLOCK Granite Per M lots of 50,000 4x4x8 in.	Brick per M 3x4x8½ in. carload lots	Wood per sq. yd. 3½ in. 16-lb. treat	PAVING ASPHALT Per ton, less than 80 penetration Tank car	Drums	ASPHALT BINDERS—FLUXES Per gal., 80-300 penetration Tank car	Drums	CUTBACK ASPHALT MC Per ton Tank car	Drums	ROAD OIL Per gal. Tank car	ASPHALT EMULSION RSI Per gal. Tank car	Drums
Atlanta	$82.00	$41.00	$2.25	$26.00	$33.25	$0.215	$0.455	$0.095w	$0.185w	$0.105	$0.115	$0.225
Baltimore	150.00‡	75.00‡	.....	21.00i	.....	.0651i	0.1751i	.09iwH	.184wH	.09i	.095i	0.185i
Birmingham	.....	49.50i	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Boston	.....	.....	.....	22.00a	23.00a	22.00av	22.00av	.09F	.....	.09a	.10aG	.22aG
Chicago	155.00‡	85.00‡	3.60/3.65‡j	19.85b	29.85b	18.85bv	28.85bv	.094bwH	.1740bwH	.0725b	.....	.....
Cincinnati	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cleveland	200.00	65.00d	5.03g	23.00A	.....	23.00A	.....	.1025AwF	.....	.....	.11AG	.18AG
Dallas	e	40.00	e	24.05	43.09	.1016	.2103	28.90	50.44	.098	.1087	1960
Denver	.....	50.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Detroit	.....	98.00	.....	27.21	.....	27.21v	.....	.1188wI	.....	.0792	.....	.211
Kansas City	e	e	e	15.00cl	.....	.06	.....	.065wJ	.....	.055c	0.10	.....
Los Angeles	e	.....	e	16.00dmx	.....	16.00dvx	.....	18.00dxK	.....	17.00dv	.0825j	.1725j
Minneapolis	.....	.....	2.97h	.....	.....	.....	.....	.....	.....	.....	.....	.....
Montreal	.....	e	e	27.00n	39.60n	.135n	.198n	16.50nu	20.90nu	.132n	.197ns	.239ns
New Orleans	.....	.....	.....	17.50e	....e	17.50ev	....e	.085ew	....e	.0825B	.085L	.....
New York	.....	.....	2.75f	23.80qCD	44.32qD	22.80qtCD	43.57qtD	.1023wCDF	.1889wDF	.....	.1023CD	.1918B
Philadelphia	175.00	110.00	4.06	22.00	.....	.....	.....	.09uF	.....	.....	.....	.....
Pittsburgh	165.00	48.00	4.60	27.00	38.00	.10	.21	27.00H	40.00H	.095	.11	.224
St. Louis	.....	.....	.....	18.55f	.....	.1713	.....	.0865wM	.....	0.155	.10	.....
San Francisco	.....	55.00e	.....	17.50z	33.00gp	17.50gkv	33.00gkv	20.00rN	37.50gN	18.75w	.085y	.....
Seattle	.....	.....	.....	17.50k	38.00k	17.25kw	.....	24.50K	.....	19.75kw	.085k	.095kr

‡ Delivered.
PAVING BRICK & BLOCK: *a* CL. *c* 2⅛ x 8⅛ x 4. *d* LCL, truck deliveries. *e* Not used. *f* 2" interior 6¢ treat. *g* 3" *h* 2" int., 8¢ treat. *i* 3 x 3½ x 8½. *j* 2½". 6lb. tr.
ASPHALTS: *a* Price at plant, Everett, Mass. *b* F.o.b. refinery Lockport, Ill. *c* F.o.b. Sugar Creek, Mo. *d* F.o.b. refinery, El Segunda. *e* F.o.b. Baton Rouge. *f* F.o.b. Wood River or Roxana, Ill. *g* F.o.b. Richmond, Calif. *k* F.o.b. Martinez. *i* F.o.b. refinery, Baltimore. *j* F.o.b. refinery, Inglewood, Calif. *k* 50-110 penetr. *l* Less than 100 penetr. *m* 40/80 penetr. *n* Tax incl. *o* Drums not avail. Shipped in steel bbl. *q* 40/85 penetr. *r* In customer's drums. *s* Shipped in drums, per drum. *t* 85/200 penetr. *u* Per 100 gal. *v* Per ton. *w* Per gal. *z* Also tank trucks *y* F.o.b. Oakland. *A* F.o.b. refinery, Cleveland. *B* F.o.b. Destrehan, La. *C* Bulk. *D* Prices based on transporting to Manhattan via truck. *E* RC. *F* Also RC. *G* Also MS, SS. *H* RCO-5 incl. *I* MC 4. *J* MC, RC .0675. *K* MC 3, 4 & 5. *L* MS. *M* MC 1-5, RC 1-5, .080. *N* MC 3.



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The top rubber cushion in a U. S. Rainbow® V-Belt is in engineering *balance* with the lower cushion. This keeps the belt cool under constant stretch and return. That's one reason why U. S. Rainbow can work so steadily on the toughest drives.

In every U. S. Rainbow the inherent stretch has been worked out beforehand in the factory, yet enough elasticity is retained to enable the V-belt to take the heaviest shock loads. The unique Equa-Tensil Cord Section—exclusive with "U. S."—insures sufficient *pull* and strength under a wide range of operating conditions. Straight sidewalls grip the grooves the full height of the belt, providing the complete contact which increases pulling power and eliminates slippage.

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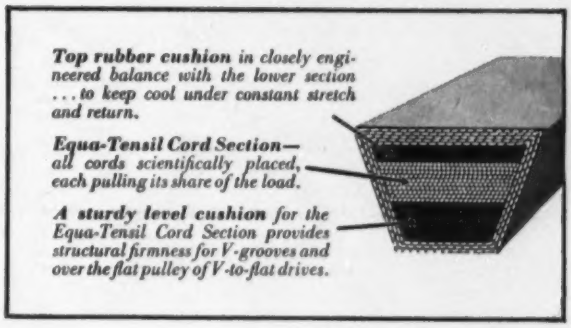
Top rubber cushion *in closely engineered balance with the lower section . . . to keep cool under constant stretch and return.*
Equa-Tensil Cord Section— *all cords scientifically placed, each pulling its share of the load.*
A sturdy level cushion *for the Equa-Tensil Cord Section provides structural firmness for V-grooves and over the flat pulley of V-to-flat drives.*

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MULTIPLE V-BELTS • F. H. P. V-BELTS • SHEAVES
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"U. S." Production builds it.
U. S. Industry depends on it.

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IRON AND STEEL PRODUCTS—PER 100 LBS. BASE MILL PRICES

	STRUCT SHAPES— CARBON STEEL	PLATE CARBON STEEL	REINF BARS billet	RIVETS ½-in. structural	SHEET PILING Base	STEEL RAILS Per Net Ton Standard	STEEL RAILS Per Net Ton Light	STEEL RAILS Per Net Ton Re-rolled	TRACK SUPPLIES Angle Bars	TRACK SUPPLIES Std Spikes	TRACK SUPPLIES Tie Plates	TRACK SUPPLIES Track Bolts
Birmingham Area	$4.10	$4.10	$4.15	$8.90	....	$86.50	$104.00	Not	$5.275	$7.05	$5.125	....
Chicago Area	4.10	4.10	4.15	8.90	$4.925	86.50	104.00	avail-	5.275	7.05	5.125	....
Pittsburgh Area	4.10	4.10	4.15	8.90	4.925	86.50	104.00	able	5.275	7.05	5.125	$11.00
Buffalo Area	4.10	4.10	4.15	8.90	4.925	86.50	104.00	....	5.275	7.05	5.125	11.00
Cleveland	....	....	4.15	8.90	4.925	.....	.....	....	....	....	....	11.00
Youngstown Area	....	....	4.15	....	....	.....	.....	....	....	7.05	....	....
Geneva	4.10	4.10	....	....	....	.....	.....	....	....	....	....	....
Los Angeles	....	....	....	....	4.925	.....	.....	....	....	7.05	....	....
Pueblo	4.80	4.70	4.75	....	....	.....	98.00	....	5.275	7.05	5.125	11.00

IRON AND STEEL PRODUCTS—F. O. B. WAREHOUSE, PER 100 LBS., BASE PRICE

	STRUCTURAL SHAPES Per 100 lb. base price	REINFORCING BARS Per 100 lb., base price 5 tons to carload lot New billet	REINFORCING BARS Rail steel	EXPANDED METAL LATH‡ Per 100 sq. yd., carload lots Std. diamond mesh, 3.4 lb.	EXPANDED METAL LATH‡ Std. ribbed 3.4 lb.	WELDED FABRIC REINFORCING Per 100 sq. ft., carload lots fob mill
Atlanta	$7.31	$7.11a	$7.11a	$38.00‡	$42.00‡	
Baltimore	6.98	6.91j	....	42.00	45.00	
Birmingham	6.35	6.15t	6.15t	50.00v	55.00v	
Boston	7.05a	7.22	7.22	38.50	42.50	
Chicago	6.46	5.75gu	5.75gu	43.00‡	50.00‡	
Cincinnati	6.93ak	6.91rs	....	39.00ms	43.00ms	
Cleveland	6.79	5.61c	....	36.50‡	40.50‡	
Dallas	9.05	7.25	7.25	49.00	52.00	
Denver	7.95	7.20c	....	48.00s	50.00ms	
Detroit	6.91	7.04dw	....	50.50	54.50	
Kansas City	7.05a	7.27	....	42.50	46.50	
Los Angeles	7.35fd	6.85	....	51.00	57.00	
Minneapolis	6.92d	7.53b	7.53b	34.50	38.50	
Montreal	7.25–8.00c/@ 20¢	6.05i	6.05i	46.00h	51.00h	
New Orleans	....	6.05akz	....	66.00	60.00	
New York	7.20	7.01y	7.01y	38.50ms	44.00ms	
Philadelphia	6.42	6.67	....	38.00‡	42.00‡	
Pittsburgh	6.40	6.40z	....	37.60	39.60	
St. Louis	6.86a	6.30c	6.30c	55.00l	56.00l	
San Francisco	7.25	6.85j	....	40.50	43.50	
Seattle	4.85s	6.20kj	....	51.00w	57.00w	

EXTRAS, per cwt:—•Quantity: less than 700#, +10¢; 700–1499#, +25¢; 1500–7999#, +80¢; •Sizes: #2 +$2.20; #3 +$1.10; #4, #5 +62.5¢; #6, #7, +45¢; #8, #9, #10 +30¢. •Bending: heavy, +80¢; light, +$3 (except in New York City and surrounding metropolitan area where bending must be done on the job). •Spirals (unassembled into fab. unit): hot roll. rods, +$1.75; cold drawn wire, +$2.75; •Engineering (details and placing from design by others): over 500 tons, +45¢; 200–500 tons, +50¢ but not over $2000; 5–20 tons, +70¢ but not over $240; under 5 tons, +85¢ but not over $70 •Design only: +60¢

Quantity extras, per cwt: under 100#, +$4; 100–399#, +$2; 400–999#, +85¢; 1000–1999#, +20¢; 2000–9999#, base price; 10,000–19,999#, +1½¢; 20,000–39,999#, —40¢; 40,000# and up, +1½¢

•‡ Delivered •a 2000–9999# •b 10,000–15,999#, fob city •c 20 tons or over •d 10,000–19,999# •e fob plant •f incl. delivering in free zone •g Cl. •h list price; dominion tax exempt; add provincial and municipal taxes •i add dominion, provincial and municipal sales taxes •j intermediate and hard grade •k fob city •l delivered; contractor to do unloading •m copper alloy •n LCL •o asphalt coated •p del. of 500 sq. yd. or more •q 4# per sq. yd. •r 2% off for cash •s add 2.5¢ switch •t add 5¢ switch, 15¢ del. •u add 6.25¢ switch •v add 15¢ del. •w add 20¢ del. •x add 5¢ switch •y add 30¢ del. •z add 10¢ del. •A American made •C Canadian made † Number system replaces inch system of classifying bar sizes, effective this issue. New system is based on number of eighth inches in diameter of bar.

	WELDED FABRIC REINFORCING Per 100 sq. ft., carload lots fob mill
	4 × 16 in., No. 5 & 10 wires— Joliet, Ill., Donora, Pa., Monessen, Pa.....$3.08
	4 × 12 in., No. 8 & 12 wires— Joliet, Ill., Donora, Pa., Monessen, Pa.....$2.02
	6 × 6 in., No. 6 & 6 wires— Joliet, Ill., Donora, Pa., Monessen, Pa.....$3.23

PLUMBING, HEATING, WATER, SEWER AND DRAIN PIPE

	C. I. PIPE Per net ton f.o.b. 6 in. to 24 in.s	ASBESTOS CEMENT PIPE per lin. ft. f.o.b. city 6" Pr Cl. 150	ASBESTOS CEMENT PIPE 12" Sew Cl. 1	VITRIFIED SEWER PIPE Per foot, Delivered ASTM C13-44T std. 8 in. s.s.	std. 12 in. s.s.	24 in. ds.	36 in. ds.	CLAY DRAIN TILE ASTM C4-24 Per 1,000 ft., carload lots, f.o.b. 6 in.	8 in.	CONCRETE SEWER PIPE Per ft., delivered: ASTMC 14-41 12 in.	24 in.
Atlanta	$101.00	$1.45	$2.42	$ .545	$1.27	$4.82	$12.925	$248.00	$356.00	$0.90m	$3.40m
Baltimore	121.50	1.45	2.42	.546	1.053	4.278s	11.3775	178.20	274.80	.95	2.60
Birmingham	108.00	1.45	2.42	.42	.75	2.99	....	250.00‡	375.00‡	1.25m	2.75m
Boston	122.00	1.47	2.30	.581qrt	1.1205qrt	4.635qrt	12.1975qrt	187.80r	289.20r	1.02mg	3.95mg
Chicago	107.00	1.45	2.30	.70m	1.35m	5.62m	13.50m	150.00‡	270.00‡	.80	2.80
Cincinnati	108.00	1.47	2.39	.581t	1.120t	4.64t	12.20t	225.00	350.00	.80m	2.95m
Cleveland	108.00	1.47	2.29	.49s	.999s	3.96s	10.65s	158.00m	245.65mc	.82m	3.10m
Dallas	113.00	1.47	2.54	.430	.700	4.00b	9.17b	.....	.....	.49	1.60
Denver	115.00	1.53	2.54	.45n	.78n	3.48n	....	.....	.....	.74m	2.50m
Detroit	108.00	1.47	2.39	.75	1.45	5.75	15.50	230.00m	350.00m	.86	3.47
Kansas City	113.00	1.47	2.29	.55	.945	3.87	10.60	250.00	480.00	.80	3.25y
Los Angeles	126.35	1.53	2.39	.62l	1.26l	5.31l	14.80l	228.20l	348.90l	.95	2.75f
Minneapolisw	112.00	1.49	2.42	.72mo	1.32mo	5.32mo	....	.....	.....	1.38h	3.93h
Montreal	110.00	....	....	1.07u	1.73u	5.52u	8.93u	.....	.....	1.17h	3.11j
New Orleans	101.50	1.45	2.42	.53	.965	5.13	....	300.00p	500.00p	.65	2.29
New York	111.35	1.47	2.20	.66	1.28	5.08	13.42	.....	.....	1.15	3.00
Philadelphia	110.00	1.45	2.30	.65	1.25	4.96r	12.65r	300.00‡	350.00‡	1.60h	3.95h
Pittsburgh	110.00	1.47	2.20	.465m	.864m	3.86m	9.78m	152.00	244.00	1.05h	2.50h
St. Louis	112.00	1.45	2.29	.56	1.03	4.22	9.80	180.00‡	380.00‡	1.20il	2.85il
San Francisco	127.00	1.53	2.29	.61d	1.41d	5.78d	14.32d	235.00‡	392.00‡	1.05m	3.30m
Seattle	122.00	1.54	2.42	.51b	.91b	....	....	150.00e	.....	.85h	2.75h

•‡ Delivered •a Class B & heavier. Based on existing freight rates; subject to rate change. Gas pipe and class A, $5 per ton additional. 4 in., $7 per ton additional. 30 in. and larger, usually, $1 per ton less. •b Extra strength ASTM C 200–44T •c 4-in., $90 •d SS361-A •e 30-in. •f 21 in. •g culvert pipe; reinforced, ASTM C 76–41 •h reinforced, ASTM C 75–41 •i reinforced, ASTM C 76–37 •j centrispun; no standard specs. in Canada •k 2% off for cash •l fob plant •m truck delivery •n LCL delivered, fob truck •o listed price based on LCL (no min.) •p freight allowed to destination in city •q ASTM C 13–40 •r CL fob origin, freight allowed •s 2 ft lengths •t 3 ft lengths •u CESA A 60–1941 specs. used •v standard strength •w 6 in., $1.67 per ft., Class 150, CL, fob track

	*WROUGHT STEEL PIPE (Full standard weight) Discount from list; see footnote Black	Galv.	Butt Weld, Lap Weld† Black	Galv.	Mill
Atlanta	26.50e	9.75e	30 50	20 50	36 75
Baltimore	27.75a	13.50a	30 50	20 50	36 75
Birmingham	22.75a	6.00	30 50	20 50	36 75
Boston	27.75a	11.00a	30 50	20 50	36 75
Chicago	26.50d	22.25d	30 50	20 50	36 75b
Cincinnati	26.75ab	10.00a	30 50	20 50	36 75
Cleveland	27.75a	11.00a	30 50	20 50	36 75
Dallas	26.50d	22.25d	30 50	20 50	36 75b
Denver	14.75ab	0.50ab	23 00	10.00b	23.75b
Detroit	27.75a	11.00a	30 50	20 50	36 75
Kansas City	26.50d	22.25d	30 50	20 50	36 75b
Los Angeles	14.75ab	0.50ab	23 00	10.00b	23.75b
Minneapolisw	26.75ab	10.00a	30 50	20 50	36 75
Montreal	26.50d	22.25d	30 50	20 50	36 75b
New Orleans	14.75ab	0.50ab	23 00	10.00b	23.75b
New York	27.75a	11.00a	30 50	20 50	36 75
Philadelphia	26.50d	22.25d	30 50	20 50	36 75b
Pittsburgh	14.75ab	0.50ab	23 00	10.00b	23.75b
St. Louis	26.75ab	10.00a	30 50	20 50	36 75
San Francisco	26.50d	22.25d	30 50	20 50	36 75b
Seattle	14.75ab	0.50ab	23 00	10.00b	23.75b

Lorain, Ohio; Aliquippa, Pa.; Sparrows Pt., Md.; Benwood, W. Va.; Youngstown, O.; Indiana Harbor, Ind.; Sharon, Pa.; Wheatland, Pa.; Etna, Pa. Calif.; Fontana, Calif.

† Threaded and coupled. a 3½ to 4 in. b Continuous weld. c 5 and 6 in. d 6 in.

• WROUGHT STEEL PIPE: Deduct discounts shown above from the following standard list consumers carload prices to get mill price. List prices per ft. (based on approx. $200 per net ton): *Butt Weld* ¼ in., 5½¢; ⅜ in., 6¢; ½ in., 6¢; ¾ in., 8½¢; 1 in., 11½¢; 1 in., 17¢; 1¼ in., 23¢; 1½ in., 27½¢; 2 in., 37¢; 2½ in., 58½¢; 3 in., 76½¢. *Lap Weld* 3½ in., 92¢; 4 in., $1.09; 5 in., $1.48; 6 in., $1.92. Add freight rates plus 3% transportation tax to get destination price.

WROUGHT IRON PIPE: List prices per ft. same as for wrought steelpipe, but add following "discounts" to get Pittsburgh mill price: *Butt Weld* — 1 in. black, + 32.75, galv. + 61.0; 1¼ in. black, + 32.75, galv. +60.50, 1½ in. black, + 29.25 galv. + 56.75; *Lap Weld* — 2½ in. to 3 in. black + 33.50 galv. + 59.5; 4½ in. to 6 in. black + 30.50 galv. + 54.75. Add freight rates plus 3% transportation tax to get destination price.

Continued on Page 95

• **Spend less time loading, get big loads . . .** Allis-Chalmers Motor Scrapers have up to 20 horsepower for every yard of struck capacity — for fast loading. A curved bottom and offset cutting edge boils the dirt in *fast* . . . completely fills the bowl and packs yardage-robbing corner voids.

• **Spend less time traveling . . .** The equal division of weight between front and rear wheels, low center of gravity, high-traction tires plus four-wheel air brakes gives the operator confidence to run at top speeds. Foam rubber seat, finger-tip control, shock-free hydraulic steering and full visibility add safety and operator comfort, which pay off in greater output.

Here's why Allis-Chalmers Motor Scrapers give you

EXTRA YARDAGE ON EVERY SHIFT

Modern equipment helps cut your operating costs in today's competition. Let your Allis-Chalmers dealer demonstrate how the Motor Scraper actually saves time on every trip, gives you extra yardage every shift.

	Hp	Struck Cap. Yd	Heaped Cap. Yd	Wt. Lb
TS-300	280	14	18	47,900
TS-200	176	10	13	37,600

• **Spend less time dumping . . .** Positive, forced ejection "bulldozes" dirt out on the run, spots or spreads it right where you want it. Ejector rides on a three-point roller suspension . . . assures complete dumping of sticky loads. High apron opens to a big 8 ft, 6 in.

ALLIS-CHALMERS

TRACTOR DIVISION — MILWAUKEE 1, U. S. A.

45,000,000 Square Feet now in use!

Reynoroof (.032" Corrugated)

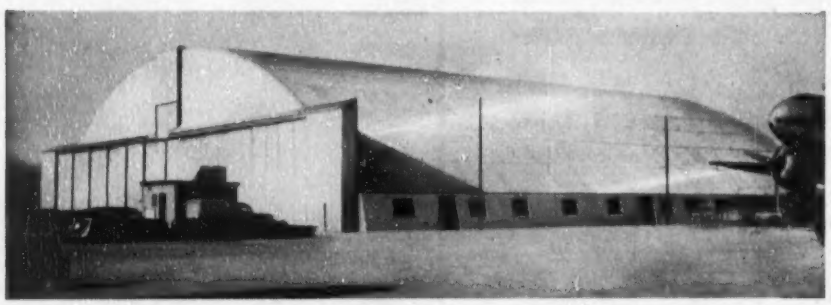
preferred for low cost and lowest maintenance

Figured as of some months past, American industry has successfully used more than 45 million square feet of Reynoroof... for both roofing and siding. In many cases, *lower applied cost* has been the primary reason. But always Reynoroof adds important maintenance savings to initial economy ...rustproof, corrosion-resistant, with no need for painting. And high radiant heat reflection (up to 95%) is an important advantage... cutting the cost of year-round temperature control. Write for literature.

DESCRIPTION:

Reynoroof Industrial Corrugated, 48" width, embossed finish.
Reynoroof Industrial Corrugated, 35" width, mill finish.
.032" thickness (22 U.S. Std. Ga.).
Lengths 5' to 12' in 6" increments.
Weight approx. 56 lbs. per 100 sq. ft.

Also Reynoside, ribbed embossed siding, ribs 4" or 8" o.c., 1" deep. Lengths up to 14' 5½".



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REYNOLDS ALUMINUM
BUILDING PRODUCTS

LUMBER, TIMBER, PLYWOOD—PER M FT., B.M., CARLOAD LOTS F.O.B.

	SHORT LEAF YELLOW PINE AND DOUGLAS FIR — All S. L. Y. P. is No. 2 common or better and for No. 1 N. C. Box. (Prices in Bold Face) *All Fir boards, dimensions, planks No. 2, Fir small timbers and timbers are No. 1 Lengths up to 20 ft.* (*Prices in italics*)								LONG LEAF Y. P. Merchantable grade up to 20 ft.		PLYWOOD Rail freight increment (See note for base price)	
	1x6 s4s	1x8 s4s	2x4 s4s	2x6 s4s	2x8 s4s	2x10 s4s	3x12 Rgh	6x12 Rgh	12x12 Rgh	2x12 Rgh	12x12 Rgh	¼"	⅜"
Atlanta	† **$77.00**	**$80.50**	**$71.50**	**$74.00**	**$77.50**	**$81.00**	**$79.00**	.....	.....	.....	.....	$22.32	$27.24
Baltimore	* **78.00**	**80.00**	**70.00**	**70.00**	**79.00**	**75.00**	**100.00**	.....	.....	**$154.50**	**$156.00**	25.92	31.60
	98.00g	*98.00g*	*92.50g*	*92.50g*	*92.50g*	*92.50g*	*94.50*	*$110.00*	*$110.00*	.....	.....	.....	.....
Birmingham	† **80.50**	**82.50**	**70.50**	**80.50**	**83.50**	**85.50**	**95.50**	.....	.....	**115.50**	**155.50**	21.78	26.58
	75.50	*75.50*	*70.50*	*70.50*	*70.50*	*69.50*	*75.50*	*75.50*	*75.50*	.....	.....	.....	.....
Boston	* **94/107a**	**99/111a**	**91/102a**	**92.50/107a**	**99/111a**	**103/111a**	.....	.....	.....	.....	.....	25.92	31.60
	‡ *89.00n*	*92.00*	*105.00*	*105.50*	*106.00*	*106.50*	*111.00*	*114.00*	*115.00*	.....	.....	.....	.....
Chicago	** **88.00**	**91.00**	**79/80**	**88.00**	**90.00**	**93.00**	**97.00**	.....	.....	**132.00**	**132.00**	22.45	27.37
	107.00	*108.00*	*110.00*	*112.00*	*112.00*	*114.00*	*118.00*	*118.00*	*118.00*	.....	.....	.....	.....
Cincinnati	* **89.50**	**95.00**	**79.75**	**88.50**	**95.00**	**97.25**	**110.75**	.....	.....	**132.00**	**132.00**	25.00	30.48
	105.50	*105.50*	*107.50*	*106.00*	*107.00*	*106.00*	*132.00*	*132.00*	*132.00*	.....	.....	.....	.....
Cleveland	** **96.00**	**98.00**	**94.00**	**90.00**	**103.00**	**106.00**	.....	.....	.....	.....	.....	25.37	30.93
	.....	.....	*114.00*	*112.00*	*114.00*	*114.00*	*114.00*	*114.00*	*114.00*	.....	.....	.....	.....
Dallas	†† **62.00**	**70.00**	**60.00**	**60.00**	**60.00**	**60.00**	**130.00**	.....	.....	**115.00**	**115.00**	18.72	22.80
Denver	* *Not in stock*		*113.00*	*114.00*	*112.00*	*115.00*	*122.00*	*135.00*	*140.00*	.....	.....	13.92	16.98
Detroit	‡ **105.00**	**108.00**	**99.00**	**105.00**	**112.00**	**112.00**	.....	.....	.....	.....	.....	25.00	30.48
	91.50	*93.50*	*101.50*	*102.25*	*99.25*	*98.00*	*108.50*	*115.00*	*115.00*	.....	.....	.....	.....
Kansas City	* **110.00**	**110.00**	**110.00**	**110.00**	**110.00**	.....	.....	.....	.....	.....	.....	16.56	20.16
	115.00	*115.00*	*120.00*	*120.00*	*120.00*	*117.50*	*155.00*	*155.00*	*155.00*	.....	.....	.....	.....
Los Angeles	‡ *95.00*	*95.00*	*95.00*	*95.00*	*95.00*	*95.00*	*123.00*	*123.00*	*123.00*	.....	.....	16.61ab	20.25ab
Minneapolis	# *135.00*	*135.00*	*135.00*	*135.00*	*135.00*	*135.00*	*155.00*	*155.00*	*155.00*	.....	.....	19.89	24.25
Montreal	ab **88.00**	**97.00**	**88.00**	**88.00**	**100.00**	.....	.....	.....	.....	.....	.....	.....	.....
	110.00	*110.00*	*110.00*	*110.00*	*110.00*	*110.00*	*105.00*	*105.00*	*105.00*	.....	.....	.....	.....
New Orleans	† **100.00**	**100.00**	**92.50**	**85.00**	**90.00**	**94.00**	**118.00**	.....	.....	**150.00**	**148.00**	18.72	22.80
	†*106.50*	*106.50*	*116.50*	*116.50*	*116.50*	*116.50*	*115.00*	*122.00*	*122.00*	.....	.....	.....	.....
New York	‡ **106.50**	**106.50**	**112/115**	**117/122**	**117/122**	**122/127**	**152/161**	.....	.....	**222/252**	**222/252**	25.92	31.60
	.....	.....	*Range from $117.00 to $122.00*				*137/153*	*147/157*	*147/157*	.....	.....	.....	.....
New York	** **80.00**	**82.00**	**69.00**	**81.00**	**84.00**	**85.00**	**115.00**	.....	.....	**190.00**	**190.00**	.....	.....
	88.00	*89.00*	*95.00*	*94.00*	*95.00*	*95.00*	*106.00*	*118.00*	*118.00*	.....	.....	.....	.....
Philadelphia	‡		**Range from $110.00 to $127.00**				**110/127**	.....	.....	**210/220**	**210/220**	25.92	31.60
			Range from $120.00 to $150.00				*130/140*	*150.00*	*150.00*	.....	.....	.....	.....
Pittsburgh	†		**Range from $95.00 to $100.00**				**110/120**	.....	.....	**110/120**	**115/125**	25.92	31.60
			Range from $110.00 to $120.00				*130/140*	*140/155*	*140/155*	.....	.....	.....	.....
St. Louis	f+ **101.00**c	**103.00**c	**97.00**d	**108.00**d	**115.00**c	**122.00**c	.....	.....	.....	.....	.....	18.72	22.80
	.....	.....	*113.25d*	*122.50e*	*122.50e*	*124.75e*	*156.00e*	*156.00*	*162.00*	.....	.....	.....	.....
San Francisco	A† *58.00*	*58/59*	*70/72*	*70/72*	*69.00*	*70.00*	*68.00*	*68.00*	*68.00*	.....	.....	12.22a	14.91a
Seattle	† *75.00*	*75.00*	*75.00*	*75.00*	*75.00*	*75.00*	*85.00*	*85.00*	*85.00*	.....	.....	.....	.....

† F.o.b. mill. * F.o.b. city, CL, out of yard. ** F.o.b. city, CL, direct mill shipment. ‡ Deliv. to contr. CL. 1. Retail, LCL, at yard. f Retail, LCL, deliv. 2. Deliv. truck lots. 3. and;

LUMBER: **Bold Face type, Southern Pine.** *Italics, Douglas Fir.* a Spruce b Tax exempt. c 5M lots. d 8–12 ft. lengths. e 8–16 ft. lengths. g No. 1 common. i 8 ft. lengths. k No. 3 common. n ¼ #1, ¼ #2 & ¼ #3. A Rail freight rate from Northwest mills to San Francisco are $11.50 to $15.00 per M ft bm. From Northern Calif. mills $9.00 by rail, $9.50 by truck. All rates for surfaced stock. For rough, add $3.00 to above figures.

PLYWOOD: Plyform grade Fir Plywood, 4' by 8' panels, 5-ply, sanded 2 sides, water resistant glue, carload lots, delivered per 1,000 sq. ft. surface. Seattle base price on ½", $152.00; on ¾", $173.00. Exterior plyform ¼" $171.00, ¾" $194.00. For other centers add rail freight increment from table on proper size Oiling and edge sealing charges included. a Lower rate by water shipment b 50,000 lb. minimum.

GLASS, EXPLOSIVES, CHEMICALS

	WINDOW GLASS — Discounts from jobbers list, Feb. 1, 1950a Single or Double Thickness		EXPLOSIVES — Per lb. 40% Ammonia Gelatin in 50 lb. cases delivered in 200 lb. lots*	
	A quality	B quality		
Atlanta	79%	80%	$0.2365	
Baltimore	78%d	80%d	.2365	
Birmingham	83%	83%	.1840	
Boston	77–10%	77–10%	.2365	
Chicago	76%	76%	.2365	
Cincinnati	76%	76%	.2365	
Cleveland	76–10–10%	76–10–10%	.2765	
Dallas	75%	75%	.2440	
Denver	79%	79%	.2415	
Detroit	78–10–10%	78–10–10%	.2365	
Kansas City	80–10%	80–10%	.2415	
Los Angeles	73%	78%	.2390	
Minneapolis	75–10%	75–10%	.2415	
Montreal	40–5%bc	40–10–5%b	21.35bh	
New Orleans	78%	79%	.2415	
New York	80–10%	80–10%	.3975g	
Philadelphia	78%	80%	.2365	
Pittsburgh	80%	80%	.2090	
St. Louis	80–10%	80–10%	.2415	
San Francisco	70%	70%	.2365	
Seattle	73%	76%	.2390	

Price of 60% Ammonia Gelatin is $0.15 per lb. higher than 40% in U.S.; $1.75 per 100 lbs. higher in Canada.

Glass: a Jobbers' list price per box, 14 x 20, sa, $42.75 for A quality, $37.50 for B quality; 14 x 20, da, $60.00 for A quality, $52.75 for B quality. b Discount from list, Apr. 1951; sales tax included, but 6% tax exemption not allowable for. c Single thickness. d Discount 6/15/52.

Explosives; * Urban prices influenced by service charges or local storage and delivery regulations do not consistently reflect quantity prices in less congested areas. g In borough of Kings, Queens, and Richmond and in Manhattan south of Canal St., add delivery charge of $20.00 per trip. h F.o.b. Beloeil (near Montreal), per 100 lb. forcite, 40%. Forcite 60%, $25.10.

40% Ammonia Gelatin price ranges in other than urban areas, per lb. (except Seismograph Grades)

	C/L 20,000 lb. net	Tons	200 lb. lots
E. of the Miss., except Fla. and Me.	$0.184	$0.2165	$0.2365
W. of Miss. to Rocky Mtn. States, Fla. and Maine	.189 – .1965	.2215–.229	.2415–.249
Rocky Mtn. States	.189 – .2015	.2215–.229	.2415–.254
Pacific N. W. States	.1865–.199	.219 – .2315	.239 – .2515
Pacific S. W. States	.184 – .1915	.2165–.219	.2365–.2415

PILES, TIES F.O.B.

PILES

Prices per linear foot, fir and pine, bark off, f.o.b. cars, New York. Fir based on Wash. and Ore. points to New York shipping area; pine based on freight from Norfolk.

Dimensions	Points	Length	By Rail — Pine*	Fir
12-in. at butt	6-in.	30 to 50-ft.	$0.51	....
12-in.— 2-ft. from butt	6-in.	50 to 59-ft.	.54	....
12-in.— 2-ft. from butt	6-in.	60 to 69-ft.	.58	....
12-in.— 2-ft. from butt	6-in.	90 to 100-ft.	....	....
13-in.— 3-ft. from butt	5-in.	91 to 100-ft.	....	....
14-in.— 2-ft. from butt	6-in.	50 to 69-ft.	.50/.66	....
14-in.— 2-ft. from butt	6-in.	70 to 79-ft.	.78/.83	.93
14-in.— 2-ft. from butt	5-in.	80 to 85-ft.	.83/.93	.94
14-in.— 2-ft. from butt	5-in.	85 to 89-ft.	....	1.00
14-in.— 2-ft. from butt	5-in.	90 to 100-ft.	....	1.03

* Pine piling over 80-ft. available only in limited quantities.

RAILWAY TIES

Prices f.o.b. per tie for carload lots:

		8"x8"x8' Untr.	8"x8"x8' Tr.	7"x9"x8'6" Untr.	7"x9"x8'6" Tr.
Boston	Oak	....	....	....	....
	Pine	....	....	....	....
New York	S. L. Sap Pine	$2.00	$4.00	$3.00	$5.00
	Mixed Oak	2.50	4.50	3.50	5.50
Birmingham	Hardwood	2.40	3.88a	2.85	4.58a
Chicago	Red Oak	....	3.40a	....	4.30/4.40a
Los Angeles	Douglas Fir	....	....	....	....
	Redwood	....	....	....	....
Philadelphia	Red Oak	2.55	3.90	3.45	5.10
St. Louis	White Oak	2.25	....	2.99	....
	Red Oak	2.10	2.65a	2.89	3.15a
	Sap Pine or Cypress	....	2.50a	....	3.00a
San Francisco	Douglas Fir	2.08ef	3.08ef	2.73ef	3.93caf
Montreal	Birch or Maple	....h	....h	....h	....h

Tr.— Treated; Untr.— Untreated. a Creosoted. b 7" x 9" x 8'. c Empty sell. e Green. f F.o.b. cars. h No constant price available. i Not available.

CHEMICALS

Water, sewage treatment, road work, f.o.b. carlots, New York

Bleaching powder in drums f.o.b. works, per 100 lb.	$5.02
Chlorine cylinders, liquid, per lb. f.o.b. works	.095
Calcium chloride, 77–80%, flaked, 100-lb. paper bag, f.o.b. works, ton	27.00
Silicate of soda, 52 deg., in drums, f.o.b. works, per 100 lb.	2.30
Soda ash, 58%, in paper bags, per 100 lb. dense	1.75
Sulphate of aluminum, commercial, in 100-lb. bags f.o.b. works	1.85
Sulphate of copper, in bags, 99% per 100 lb. f.o.b. works	10.35

STRUCTURAL CLAY BUILDING TILE, BRICK AND LIME—DELIVERED

	STRUCTURAL CLAY TILE — PARTITION — SCORED, Per M. lots of 2,000 pieces or over, 3x12x12 in.	4x12x12 in.	8x12x12 in.	STRUCTURAL CLAY TILE — LOAD BEARING — SCORED, Per M. lots of 2,000 pieces or over, 8x12x12 in.	10x12x12 in.	12x12x12 in.	BRICK — Per M. in quantity, Common backing	Straight hard	LIME — Per ton, in paper, Carload lot, Hydrated finishing	Common hydrated	Pulverized, or lump
Atlanta	$195.00	$207.00	$247.00	$327.00	$342.00	$381.00	$27.38	$27.38	$19.00	$17.50	$.....
Baltimore	186.00	198.35	372.00	421.50	549.00	627.00	36.00k	41.00k	32.00	21.50	.....
Birmingham	126.00p	136.00p	.....	284.00p	.....	.....	26.50ff	32.00gg	29.25	24.00	.....
Boston	196.00†	209.00†	392.00†	283.25†	.....	.....	36.85p	39.85p	30.00†	28.00†	.....
Chicago	186.00	145.00	280.00	.....	.....	.....	26.00	28.00	30.80	26.00	.....
Cincinnati	185.00f	195.00f	360.00fdd	.....	.....	.....	45.00f	46.00f	26.00f	26.00f	.....
Cleveland	170.00**	181.00**	.....	.....	.....	.....	34.50	34.50	28.25	23.25	32.00ee
Dallas	.....	118.00	.....	.....	.....	.....	19.75	32.25	32.00	21.80	.....
Denver	.....	.....	.....	.....	.....	.....	34.00	41.00	34.80bb	28.00bb	34.00bb
Detroit	130.00	138.00	259.00	.....	315.00	360.00	37.75ee	36.75ee	33.60	28.00	.....
Kansas City	127.50	147.50	270.00	270.00	340.00	400.00	28.50	.....	32.00	26.00	28.50
Los Angeles	r	r	r	r	r	r	27.50§	.....	34.00	34.00	35.00
Minneapolis	175.00p	196.00p	407.00p	196.00p	.....	.....	35.00wp	45.00	39.00bbs	29.00bbs	41.00bbds
Montreal	165.00aq	181.00au	325.00au	230.00	243.00v	.....	39.50	46.00	34.80	22.00	13.75u
New Orleans	170.00	170.00	310.00	380.00	.....	.....	31.00	.....	.....	28.00	28.00
New York	147.30A	157.10A	216.00eA	238.10An	.....	.....	40.00	.....	36.00	32.00	.....
Philadelphia	145.30	155.00	290.60	348.70	.....	.....	30/34	35/42	25.00	23.00	2.97
Pittsburgh	138.00	151.00	260.00	228.00	297.00	341.00	36.00	46.00y	35.00	23.00	2.97m
St. Louis	142.00cc	160.00cc	319.00cc	465.00cc	361.00	621.50	40.00sl	38.50s	.90aas	.75aas	1.25aaspss
San Francisco	156.85a*	177.10a*	235.30ddaa*	.....	.....	.....	37.00	.....	26.60	26.60	2.65m
Seattle	223.00ee	230.00ee	.....	240.00aaw	.....	.....	34.00s	40.00s	42.00aAA	37.50	3.90mAA

† F.o.b. yard Roxbury. a Smooth. b Per 50 lb. bags. c 6 x 12 x 12 in.-3 coll. d Pulverized bot. e 8%, 10th following month. g 5½ x 8 x 12. h F.o.b. trucks, job site N.Y.C. j Truck load or over. k $1.00 discount l Red face. m Per bbl., 180 lb. n 7½ x 7½ x 12. Speed title. p Truck lots. q Provincial and Municipal tax extra. r Not used because of earthquake danger. s 2% discount for cash. t 5½ x 8 x 11¼. u Tax exempt. v Sand lime. w 5 x 8 x 12. y Stacked. z Pebble lime price per 80 lb. sack. aa Price per sack. Lime not sold per ton. bb LCL. cc Truck delivery. dd 6 x 12 x 12. ee Pebble lime. ff 80% common. gg Select. hh LCL. § F.o.b. yard. ** Warehouse delivery. * F.o.b. Stockton.

PAINT, ROOFING—F.O.B. CARLOAD LOTS

	RED LEAD — Per 100 lb. in 500-lb. (Approx.) bbl. Dry a	WHITE LEAD — Per 100 lb. in 100 lb. cases In oil w	READY-MIXED PAINT — Per gal., drums, Graphite b	Aluminum c	Ferric Oxide d	ROOFING SUPPLIES; Carload lots f.o.b. factory — Rolls, slate surfaced, 85-90 lb. per sq.	Asphalt felt, per 100 lb.	Tar felt, per 100 lb.	Asphalt coating per gal.	Tar pitch 350 lb. bbl. per ton
Atlanta	$16.75	$28.275	$3.26	$3.51	$3.01	$2.74	$3.01	$2.98	$0.405	$39.75
Baltimore	16.50	27.90	2.75	4.25	3.35	2.66	4.43	4.43	.47	45.56
Birmingham	16.75	28.275	3.90	3.40	....	2.93	2.93	2.93	....	42.00ee
Boston	16.50	27.90	....	....	....	2.69qq	2.39qq	2.39qq	.42q	48.50q
Chicago	16.50	27.90	....	....	....	2.52‡u	2.50‡o	2.50‡o	38.00‡bbr	48.00‡
Cincinnati	16.50	27.90	....	....	....	2.50	2.585	2.585	.46y	47.86
Cleveland	16.50	27.90	2.37pqq	2.89qq	2.64qq	2.38q	2.15o	2.15o	.33y	40.70hh
Dallas	16.75	28.65	....	4.05	....	3.50q	3.75o	4.35o	.36	58.50hh
Denver	17.00	28.40	3.29	5.15	3.04	2.38	2.05o	2.40o	.43ff	45.00
Detroit	16.50	27.90	2.35	3.25	2.50	2.97	2.15f	2.15	.50	44.00
Kansas City	16.50	28.65	....	2.71yo	2.65	3.40	3.20o	3.20o	.43	53.00
Los Angeles	16.50	28.15	3.30v	4.50v	4.20v	2.63v	1.70ev	i	.58v	i
Minneapolis	16.50	29.88/28.02	....	....	....	2.38ddd	2.15hddd	2.15hddd	.37¢dd	42.00r
Montreal	....	20.95	2.95p//	4.05#//	3.25p//	4.00t	3.65ff	3.65t	1.06ii	3.30ii
New York	16.50	27.90	....	....	....	2.24v	2.02vo	2.02vo	.35vz	42.00v
Philadelphia	16.50	27.90	3.25	3.65	3.15¶	2.54	2.94	2.94	.37	26.00
Pittsburgh	16.50	27.90	2.65	2.85	3.15¶	2.75	2.50o	2.50o	.38	45.00
St. Louis	16.50	27.90	....	....	....	2.33	2.15h	2.15h	.33y	48.45
San Francisco	16.50	28.15	2.40	....	3.40	2.95	4.00aa	....	.49	....
Seattle	16.50	28.40	3.07mee	2.93mee	....	3.58mqq	3.05hmee	....	59mee	52.00mee

‡ Delivered. Note: Red lead in oil 50c higher than white lead in oil. a Red lead prices change frequently due to pig lead price changes. b U. S. War Dept. Spec. 3-49A. c ASTM Spec. D266-31. d 80% minimum ferric oxide. e 15 lb. f Per 432 sq. ft. g F.o.b. yard, Roxbury. h Per roll. 65 lb. i Net carload lot prices; Minneapolis and vicinity. k Per cwt. l Not used. m 1% discount for cash. n F.o.b. city. o Per 60-lb. p 6-drum, 50 gal. ea. q Per 90-lb. roll. r F.o.b. factory, Chicago. s 486 Med. t Federal tax included. u Per 90 lb. square. v Per ton. w Price to large paint contractors is $1.25 less x Mineral surfaced. y 55-gallon container. z Drums. aa Approximate cost per 100 lbs. bb Roofers coating and cement; Price per ton. cc LCL, truck delivery. dd 2% cash discount. ee Asphalt pitch in 100 lb. package. ff 5-gal. drums. gg F.o.b. factory. hh Incl. freight. D. Std Black. E. Ready-mixed. F. Over 80% ferric oxide. * Aver. wt. approx. 425 to 550 lbs. drum. # Freight allowed to destination not exceeding .50 cwt.

SKILLED AND COMMON WAGE RATES—PER HOUR

	Bricklayers	Carpenters	Struct. Iron Workers	Hoisting Engineers	Plasterers	Electrical Workers	Steamfitters	Common Labor — Building	Common Labor — Heavy Const.
Atlanta	$3.10	$2.80	$2.75	$2.50	$2.60	$2.75	$2.90	$1.28	$1.28
Baltimore	3.20d	2.75	3.275f	3.10/3.25	3.075f	2.975	2.975f	1.675f	1.675f
Birmingham	3.15	2.40	2.925h	2.245	2.62	2.875	2.875h	1.30	1.40
Boston	3.185v	2.75	3.15f	3.20	3.20f-v	3.13g	3.10d	2.14**g	2.14**g
Chicago	3.55‡V	3.30vV	3.35v	3.15mV	3.525v	3.53fV	3.39v	2.50vV	2.50vV
Cincinnati	3.325	2.975w	2.99w	28.5/3.10	3.10	3.28g	3.175hw	2.12	2.12
Cleveland	3.325f	3.275f	3.275f	3.275	3.275	3.275	3.275v	2.525	2.525
Dallas	3.50	2.625	2.875	2.75	3.437	3.00	2.90	1.40	1.40
Denver	3.50	2.775	2.75	2.705	3.30	3.00	3.05	1.80	1.80
Detroit	3.45ee	3.21w	3.33v	3.20v	3.49dl	3.52gl	3.125h	2.45v	2.45v
Kansas City	3.025	2.75	2.90	2.725/2.97	3.25	2.987o	3.075h	2.03	2.03
Los Angeles	3.285o	2.70	2.925h	2.57	3.437g	3.20	3.225v	2.05	2.05
Minneapolis	3.225	2.80	2.92	2.75	3.00	3.15n	3.00	2.05	2.05
New Orleans	3.10	3.47	2.85w	2.65	2.475	2.925hw	3.00v	1.425	1.425
New York	4.15br	3.57bJ	3.975v	3.84J	4.15d	3.63aeF	3.815bL	2.415J	2.415J
Philadelphia	3.92i	3.20	3.51M	2.975/3.72v	3.625N	3.55v	3.515v	1.95	2.25
Pittsburgh	3.475d	3.20h	3.475h	3.325h	3.30h	3.35	3.00	2.025h	2.025h
St. Louis	3.82c	3.125h	3.025h	3.125h	3.25h	3.28c	3.05R	2.175h	2.175h
San Francisco	3.475bk	2.93h	3.075hw	2.65w	3.45eh	3.225U	3.275R	2.125h	2.125h
Seattle	3.40d	2.75d	2.95d	2.78	3.25d	2.925	2.95T	2.25	2.35d
Montreal*†	2.00	1.90v	1.90	1.70	2.00	1.90	1.90	1.25	1.25

* Cost of living bonus now included in basic wage. # Includes 5¢/hr tool replacement. † Plus 2% vacation pay.

a 6 hr. day. b 7 hr. day. c Incl. 3% vac. stamp fund plus 7½¢ WF for bricklayers; 4% VF for electricians plus 8¢ WF, 1% PF. d Incl. 10¢ H&WF. e Incl. 10¢ VF. f Incl. 6% WF. g Incl. 11½¢ WF h $2.725 homes & housing plus 7½¢ WF. i Incl. 17¢ WF j Incl. 10½¢/hr. WF. k Incl. 7½¢/hr. WF. l Incl. 4% VF. m Incl. 5¢/hr WF. n Incl. 25¢ H, W, Ins., Vac. & Retirement. o Incl. 10¢ PF. 7¢ WF. p Incl. 3% WF, 3% PF. q Incl. 4% WF and 20¢ PF. r Incl. 5% W&PF, 4% VF, 1% NC, 6 PH. s Incl. 7½¢ H&WF. t Incl. 1½% WF. u Incl. 10¢ WF. v Negotiating. w Incl. 8¢ WF. x Incl. 22½¢ WF. y Incl. 7½¢ IF, 5¢ H&WF. z Incl. 15¢ WF, 15¢ PF & 20¢ B.F. aa Incl. 3% WF, bb Incl. 2½¢ H&WF. cc Plus 5% WF, plus travel pay per day. dd Plus $4/per day Annuity contrib. ee Incl. 11¢ H & WF. ff Incl. 7¢ WF, 6% VF. gg Incl. 15¢ H&WF. hh Incl. 5% WF, 6PH. ii Incl. 10¢ H&WF, 10¢ VF, 2½% PF. jj Incl. 3% WF, 3% PF, 2% VF, 1% EF. kk Incl. 7½¢ PF. ll Incl. 1% WF. mm Incl. 2% WF, 1% PF. nn Incl. 12¢ WF and 1¢ apprentice. oo Incl. 12½¢ H and WF. pp Incl. 21¢ H, W & VF. qq Incl. 7½¢ WF, 4% VF, 1% PF. rr 15¢ incr. eff. 7/5/54. ss Incl. 2% WF. tt Correction: June $2.14.

MEXICO CITY PRICES

In Pesos, F.o.b. City		May '54	June '54
Common Wages—Building (8 hr. day) (Peons)	av. per hr.	1.00	1.10
Common Wages—Heavy Const. (8 hr. day) (Peons)	av. per hr.	1.00	1.00
Skilled Labor Wages			
Carpenters (8 hr. day) 1 cl.	av. per hr.	2.25	2.48
Bricklayers (8 hr. day) 1 cl.	av. per hr.	2.25	2.48
Struct. Iron Workers (8 hr. day) ..... Remachadores.	av. per hr.	1.13*	1.24*
Struct. Steel Shapes 3"-15" x 12 meters	per metric ton	1538.22	1428.62
Reinf. Steel, Corr. Rods			
⅜" x 11 meters	per ton	1490.00	1490.00
½" x 11 meters	per ton	1490.00	1490.00
⅝" x 11 meters	per ton	1490.00	1490.00
¾" x 11 meters	per ton	1490.00	1490.00
⅞" x 11 meters	per ton	1490.00	1490.00
1" x 11 meters	per ton	1490.00	1490.00
Gravel truck load of 3½ cu. meters			
Blue Gravel	per tr. load	58.00	60.00
Rose Gravel	per tr. load	60.00	62.00
Cement, Std. Port. (Tolteca)	per ton	160.00	160.00
Lumber			
3rd Class Pine	per M ft.	850.00	850.00
1st Class Pine	per M ft.	1600.00	1500.00
2nd Class Pine	per M ft.	1400.00	1300.00

* 1st & 2nd fl., add 40% ea. addn'l floor over preceding one.

Substitute for OYAMEL now restricted.

ENR Skilled Average: (Bricklayers, Carpenters, Iron workers): $3.147 **ENR Common Average:** $1.997.

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- LOWER TIME COSTS
- LOWER CAPITAL INVESTMENT
- FASTER PRODUCTION
- FEWER INVENTORY LOSSES

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UNITED STATES STEEL

CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded—First Section—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. O. WETZEL, L. M. WINISKI, M. E. SCIORRA, F. S. DEMBEK, Reports.
J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

† **Me., Limestone**—THEATER—BA On Or About 7/30—U. S. Eng., 857 Commonwealth Ave., Boston 15, Mass., theater, parking area, Limestone Air Force Base, ENG-19-016-55-4. $250,000-$500,000.

Mass., Holyoke—BA 8/27—City, Bd. Water Comrs., City Hall, constr. Manhan Dam, West Branch of Manhan River, Southampton. $100,000. Plans deposit $65, refundable. Tighe & Bond, 189 High St., engrs. CD 1/27.

BIDS ASKED—BUILDINGS

Me., Brunswick—SCHOOL—BA 7/15—Town, School Dpt., Main St., cinder block, brick elementary school. $566,000. Plans deposit $15, refundable. Stevens & Saunders, 187 Middle St., Portland, archts. CD 8/25.

Mass., Boston—BOILER PLANT—BA 7/15—State, Dpt. Educ., c/o President's Office, State Teachers College, Boston, E-602 Contr. 1 boiler plant renovations. $112,000. Plans deposit $20, refundable. Charles T. Main, Inc., 80 Federal St., Boston, engr. CD 9/10.

Mass., East Longmeadow—SCHOOL—BA 7/15—Town, Howard Hill, supt. Schools, elementary school Birchland Park School, $660,000. Plans deposit $100 refundable, Alderman & MacNeish, 594 Riverdale Rd., West Springfield, archts. CD 12/15.

Mass., Lenox—ADMINISTRATION—BA 7/15—State, Dpt. P. Wks., 100 Nashua St., Boston, administration bldg., garage. $420,000. Plans deposit $50, refundable. Arthur G. Manaselian, 30 Huntington Ave., Boston, archt. CD 4/14.

Mass., Boston—RECEPTION DETENTION—BA 7/16—State, Youth Service, c/o Div. Bldg. Constr., 38 Chauncy St., Boston, Y-402 rein.-con., masonry reception detention bldg. $825,000. Plans deposit $50, refundable. Aisner & Atwood, 10 Newbury St., Boston, archts. CD 7/7/53.

SOON LETS CONTRACT—BUILDINGS

Conn., New Britain—SCHOOL, etc.—Holy Cross R. C. Church, 230 Farmington Ave., soon lets contract parochial school and convent, Farmington Ave. $325,000. Francis L. S. Mayers, 126 Bedford St., Stamford, archt. CD 4/17.

Mass., Medford—PLANT—Robert Gair Co., Inc., 155 E. 44 St., New York, N. Y., Graham Corp., Div. Robert Gair Co., 85 Kemble St., Roxbury, soon lets contract 35,000 sq. ft. brick paper mgr. plant, Middlesex Ave. $300,000. CD 6/25.

Mass., Somerville—WAREHOUSE—Cott Bottling Co. of Somerville, Mass., Inc., 321 Washington St., soon lets contract warehouse, 321 Washington St. $200,000. Joseph L. Paley & Sol S. Richmond, 27 School St., Boston, engrs.

Mass., South Boston—PROCESSING, etc.—Peter Condakes Co., 453 C St., soon lets contract 2 story, 80x100 ft. steel, masonry processing bldg. and sales, 453 C St. $190,000. Lockwood Greene Engineers, Inc., 40 Central St., Boston, engrs.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MAINE—Maine Turnpike Auth., 17 Bishop St., Portland,
Theodore Loranger & Sons, 404 Nash Rd., New Bedford, Mass. LB **$481,442** Alt. A, **$448,837** Alt. B, est. $450,000. Contrs. 216, 216A, 216B Sect. 2, 8 bridges (Augusta Exten.), West Gardiner and Hallowell. Bids June 24. CD 6/8.

▲ **MAINE**—Maine Turnpike Auth., 17 Bishop St., Portland,
Gil Wyner Co., Inc., 12 Newland St., Malden, Mass. CA **$1,016,735**, est. $1,000,000, Alt. B, Contrs. 218, 218A, 218B Sect. 2, 13 bridges, South Portland, Portland and Falmouth. CD 6/2, under LB.

MAINE—Maine Turnpike Auth., 17 Bishop St., Portland,
Consolidated Constr. Co., Draper Ave., North Attleboro, Mass. CA **$780,757**, est. $780,000, Alt. B, Contr. 214, 8 bridges, New Gloucester and Auburn;
Theodore Loranger & Sons, 404 Nash Rd., New Bedford, Mass. CA **$473,785**, est. $475,000, Alt. B, Contr. 215, 9 bridges, Webster-Litchfield. CD 6/15, under LB.

MAINE—State Hy. Comn., State House, Augusta.
Bridge Constr. Corp., Augusta, Me. CA **$252,374**. b. conc. 3.732 mi. F.A. Secondary Proj. S 0218 (1), Swanville and Belfast. Bids June 23. CD 6/16.

Ralph B. Goodrich, 16 Wright Court, South Burlington, Vt., LB, **$245,626**, est. $250,000, sewers and drains, BURLINGTON, VT. City, B. F. Garrity, chn. Bd. Street Comit. City Hall, Burlington, Vt. Bids June 22. CD 6/8.

Joseph Perry, 906 Hathaway Rd., New Bedford, Mass. CA, **$52,938**, est. $54,000. 3 stone groins and exten., reconstr. existing jetties, Dennis, MASSACHUSETTS. Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, Mass. Bids June 15. CD 6/8.

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
Petricca Constr. Co., 534 West St., Pittsfield, Mass. CA **$64,668**, est. $54,000. hy. work East Main St., North Adams. Bids June 22. CD 6/9.

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
Eastern Roads Co., 101 Terrace St., Roxbury, Mass. CA **$566,440**, est. $540,000. reconstr. hy. Rte. 6, Mattapoisett. CD 6/7, under LB.

MASSACHUSETTS—Commonwealth of Mass., Metropolitan Dist. Comn., Parks Div., 20 Somerset St., Boston,
Old Colony Constr. Co. of Quincy, Vernon St., Quincy, Mass. LB **$609,997**, est. $600,000. reconstr. William T. Morrissey Blvd.-Tolman St. to Dorchester Bay Bridge, Boston and Dorchester. Planning & Research Assoc., 45 Bromfield St., Boston, Mass., engrs. Bids June 24. CD 6/9.

Carriere Constr. Co., 134 Whitford St., Roslindale, Mass. LB **$91,748**, est. $100,000. b. conc. Bateman St., Roslindale, BOSTON, MASS. Dpt. P. Wks., City Hall, Annex, Boston, Mass. Bids June 24. CD 6/16.

▲† **John A. Volpe Constr. Co.**, 54 Eastern Ave., Malden, Mass. LB **$2,226,145**. est. $2,000,000-$2,750,000. 100-bed hospital, boiler house, dental clinic, Westover Air Force Base, ENG-19-016-54-1, CHICOPEE FALLS, MASS. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids June 24. CD 6/2.

† **Theodore Loranger & Sons**, 404 Nash Rd., New Bedford, Mass. LB **$735,500**, est. $750,000. readiness hangar, aircraft maintenance hangar, aircraft maintenance shop, connecting utilities, Otis Air Force Base, ENG-19-016-54-115, FALMOUTH, MASS. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids June 25. CD 6/8.

† **J. W. Praught & Co.**, 1803 Dorchester Ave., Dorchester, Mass. LB **$204,900**, est. $500,000. aircraft fueling sys., Otis Air Force Base, ENG-19-016-54-120, FALMOUTH, MASS. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids June 24. CD 6/15.

Chesterbrooke Constr. Co., 43 Chesterbrooke Rd., Waltham, Mass. CA **$170,000**. street constr. various streets, MELROSE, MASS. City, P. Wks. Dpt., City Hall, Melrose, Mass.

Bonded Constr. Co., 40 Kensington St., Newton, Mass. LB **$85,551**, est. $85,000. street constr., Adams Ave. from Cherry to Milton Sts., Pershing Rd. to Sheridan St., NEWTON, MASS. City, H. F. Young, street comr., City Hall, Newton, Mass.

Underground Constr. Co., 97 Summer St., Hyde Park, Mass. LB **$61,900**, est. $60,000. Contr. 1 furnish, laying sewer pipes, NORTH ATTLEBORO, MASS. Town, Bd. Water Comn., Odd Fellows Bldg., Washington St., North Attleboro, Mass. Whitman & Howard, 89 Broad St., Boston, Mass., engrs.

† **J. W. Praught & Co.**, 1803 Dorchester Ave., South Boston, Mass. LB, **$117,900**, est. $120,000. replacement of steam and condensate lines, Naval Shipyard, NOY 81130, Spec. 40146, SOUTH BOSTON, MASS. First Naval Dist., 405 Summer St., Boston, Mass. Hayden, Harding & Buchanan, Park Square Bldg., Boston, Mass., engrs.

Chicago Bridge & Iron Co., 201 Devonshire St., Boston, Mass. LB **$43,570**, est. $60,000. constr. steel standpipe (water), WALTHAM, MASS. City, Purch. Agent, City Hall, Waltham, Mass. Bids June 25.

RHODE ISLAND—State of Rhode Island and Providence Plants, F. A. Adams, purch. agt., State House, Providence.

M. A. Gammino Constr. Co., 728 Valley St., Providence, R. I., LB **$281,703**, est. $286,000, b. conc. pavement Type 1-1 on crushed stone or crushed grav. base 3.2 mi. Pascoag Rd. from Chepachet to Pascoag, Gloucester and Burrilville, Contr. No. 5409, F.A. Proj. S-0201 (1), Providence Co.; LB **$299,832**, est. $300,000. b. conc. Type 1-2 on Type A gravel base course 5.615 mi. Shelton and Reynolds Rds. from Hartford Pike to Putnam Pike, Foster and Gloucester, Contr. 5412 S-0215 (1), Providence Co. Bids June 23. CD 6/11.

CONNECTICUT—State Hy. Comn., State Office Bldg., Hartford,
Peter Mitchell, Inc., Hackett Bldg., Greenwich, Conn., LB, **$170,729**, 900 lin. ft. c. conc. and reconstr. work on Merritt Parkway Toll Plaza, Greenwich.

BUILDINGS

LOW BIDS AND CONTRACTS

J. R. Partridge Constr. Co., 123 Western Ave., Augusta, Me. LB **$398,590**, est. $350,000. WAREHOUSE, Hallowell Muster Field, HALLOWELL, ME. State, Liquor Comn., Weston St., Augusta, Me. Bids June 24. CD 6/3.

▲ **F. W. Cunningham & Sons**, 181 State St., Portland, Me. CA Est. **$1,000,000**. SERVICE BLDG. and WAREHOUSE, PORTLAND, ME. Central Maine Power Co., 9 Green St., Augusta, Me. Bids June 8. CD 5/25.

MacMillan Co., Inc., 28 Mechanic St., Keene, N. H., LB, **$113,657**, est. $120,000. DAIRY PROCESSING BLDG. SPRINGFIELD, VT. IDLENOT Farm Dairy, Inc., French Meadow Rd., Springfield, Vt.

Lilly Constr. Co., 122 Hampshire St., Cambridge, Mass. LB **$325,000**. TEMPLE and COMMUNITY CENTER, Concord Ave. and Blanchard Rd., BELMONT, MASS. Beth El Temple Center, c/o Arthur S. Hotch, chn Bldg. Comn., Earl A. Grollman, rabbi, 220 Lexington St., Belmont, Mass. Bids June 23. CD 6/1.

▲ **M. Spinelli & Sons, Inc.**, 25 Moulton St., Cambridge, Mass. CA **$1,847,000**, est. $1,800,000. HOUSING, South Common Village, Gorham St., Proj. PHA 1-3, LOWELL, MASS. Lowell Housing Auth., 18 Market St., Lowell, Mass. CD 6/15, under LB.

J. F. Rand & Son, 57 Sudbury St., Boston, Mass. LB **$547,978**. SCHOOL S. Main St., opposite Walpole St., Sharon Heights, SHARON, MASS. Town, M. P. Woodson, chn. Bldg. Comn., office Supt. Schools, High School, Sharon, Mass. Bids June 24. CD 5/28.

Sciaba & Co., Inc., 86 Shawmut Ave., Boston, Mass. CA, **$568,900**. est. $550,000. HIGH SCHOOL addn., Pauline St., WINTHROP, MASS. Town, 45 Pauline St., Winthrop, Mass. CD 6/21, under LB.

▲† **Gilbane Building Co.**, 90 Calverley St., Providence, R. I., CA **$1,509,995**, est. $1,550,000. TRANSIT SHED, Naval Supply Depot, NOY 79817, Spec. 38329, NEWPORT, R. I. First Naval Dist., 495 Summer St., Boston, Mass. Bids June 8. CD 6/14, under LB.

Ames Constr. Co., 15 Standish St., Hartford, Conn., LB, **$377,827**, elementary SCHOOL, south of Oak St., EAST HARTFORD, CONN. Town Bd. Educ., 200 Burnside Ave., East Hartford, Conn. CD 2/3.

The F. W. Brown Co., 25 Chestnut St., Norwich, Conn. LB, **$778,954**, Junior High SCHOOL, Avery Property, on Brandegee Ave., GROTON, CONN. Town Supt. Schools, Groton, Conn. Bids June 22. CD 5/25.

† **Dist. P. Wks. Office, Third Naval Dist.**, 90 Church St., New York 7, N. Y., rejected bids June 22, installation of services, torpedo battery shop, Bldg. No. 408, U. S. Naval Submarine Base, Contract NOY 81400, Spec. 41720, NEW LONDON, CONN. CD 6/16.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

PENNSYLVANIA — BA 7/14 — Pennsylvania Turnpike Comn., 11 N. Fourth St., Harrisburg.

Lehigh Co.—constr. structures, and grading, drainage and paving 2.96 mi. Turnpike Sect. 36-A in Lower Macungie, Upper Macungie and South Whitehall Twps. CD 10/28/53.

(Continued on page 100)

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $34,000; other public works $60,000; industrial buildings $82,000; other buildings $300,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England
Middle Atlantic
South
Middle West
West of Mississippi
Far West

PROPOSED WORK

Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Public Buildings
Mass Housing
Commercial Buildings
Industrial Buildings
Unclassified

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.

BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.

LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.

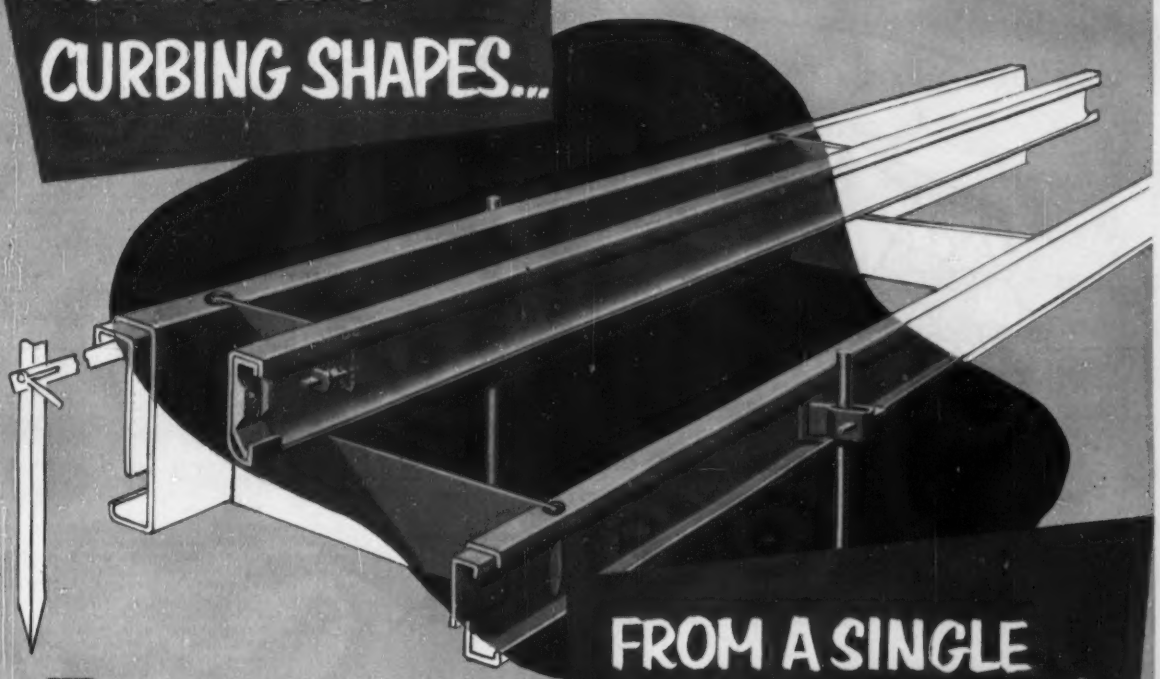
CD dates shown are of Construction Daily issue in which last previous report was published.

Symbols and Abbreviations Include:

† Federal Government
▲ Project of $1,000,000 or over.
ENR Engineering News-Record
CD Construction Daily

For additional reports see Construction Daily.

A CITY FULL OF CURBING SHAPES...



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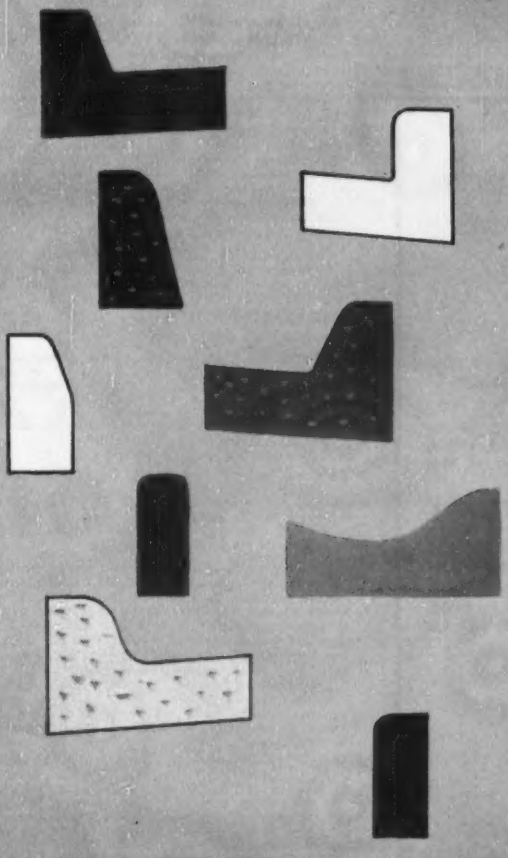

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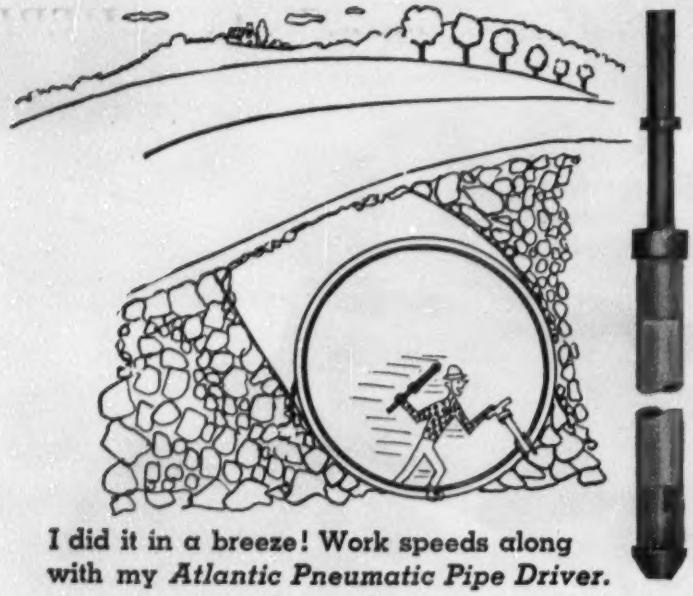

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211 E. PRELOAD 37 Street
TRADE MARK

New York 16, N. Y.

(Continued from page 98)

New Jersey—LIGHTING ADDNS.—BA 7/15—New Jersey Hy. Auth., State Hy. Dpt. Office Bldg., 1035 Parkway Ave., Trenton, N. J., Garden State Parkway, Contract 138, Section 7, lighting addns. at Route 35-Smith St. Area, Woodbridge, Twp., Middlesex Co. Plans deposit $10.

N. Y., Brooklyn—PLAYGROUND—BA 7/15—Dpt. P. Wks., Municipal Bldg., New York, Zone 7, general constr., plumbing, heating, electrical for constr. of Broadway-Kent Playground, Kent Ave. and S. 8 St. Plans deposit $20.

N. Y., Rochester—CHIMNEY—BA 7/15—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany, chimney, Barge Canal Terminal Bldg. Plans deposit $10.

† N. Y., West Milton—BA 7/20—General Electric Co., Knolls Atomic Power Laboratory, P.O. Box 1072, Schenectady, erection of cooling water facilities in Bldg. No. 1, Knolls Atomic Power Laboratory, River Rd., Town of Niskayuna, Schenectady Co. CD 9/18/52, under Public Buildings.

† Md., Carderock—SCHLIEREN SYSTEM—BA 7/21—Dist. P. Wks. Office, Potomac River Naval Command, Naval Gun Factory, Wash., D. C., schlieren system, for 7 by 10 ft. sonic wind tunnel at David Taylor Model Basin, NOY 79989. Plans deposit $20. CD 8/10.

New York—TRAFFIC SIGNAL SYS.—BA 7/22—Henry A. Cohen, dir., Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany, traffic signal sys., Corning City: Erie Ave.-Denison Parkway, FAC 53-19. Corning City: Denison Parkway, Ext. FAC 49-4. Proj. U-225 (8) Cont. No. 2, Contr. FATC 54-2. $15,000. Plans deposit $10., adv. ENR 7/8.

† New York—BA 7/28—U. S. Eng., 80 Lafayette St., New York Zone 13, clearing and snagging proj., Dock Hill Brook, Cornwall, Serial No. CIVENG—30-075-54-57. $5,000. CD 5/27.

N. Y., Tonawanda—BA 7/28—Town Bd., Municipal Bldg., Kenmore, constr. 16 M.G.D. capacity water treatment plant with all equipment, piping, electrical work, heating, plumbing, outside piping, etc. Plans deposit $75. Nussbaumer, Clarke & Velzy, 327 Franklin St., Buffalo, Zone 2, consult. engrs.; adv. ENR 7/8. CD 10/19/44.

† Del, Dover—DENTAL CLINIC—BA On or About 8/6—U. S. Eng., 121 N. Broad St., Phila. 1, Pa., dental clinic, Dover Air Force Base, Inv. No. ENG-36-109-55-1. Bids Sept. 1 rejected. CD 8/20.

BIDS ASKED—BUILDINGS

N. Y., Astoria—LIBRARY—BA 7/14—Dpt. P. Wks., Municipal Bldg., New York, Zone 7, general constr., plumbing, heating and ventilating, electrical work and lighting fixtures for constr. of Steinway-Astoria Branch Library, east side of 31 St., 350 ft. north of Ditmars Blvd., Queens Boro. Plans deposit $25. CD 1/21/44.

New Jersey—BUILDINGS—BA 7/15—New Jersey Hy. Auth., State Hy. Dpt., Office Bldg., 1035 Parkway Ave., Trenton, Garden State Parkway, Sections 2 and 4, buildings for Brookdale (South Bound), Service area in Town of Bloomfield, Essex Co., and Vaux Hall Service Area, in Union Twp., Union Co. Plans deposit $10.

SOON LETS CONTRACT—BUILDINGS

Pa., Paoli—SHOPPING CENTER—Paoli Markets, Inc., 5 E. Montgomery Ave., Cynwyd, soon lets contract shopping center. $350,000. J. Margolis, 2206 St. James Pl., Phila., archt.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Beacon Constr. Co., 102 Hano St., Boston, Mass., LB, $788,000, est. $800,000. Type B, gas station and restaurant at Canastoga, Type A at Clifton Springs and Type B at LeRoy, New York State Thruway Auth. Spec. 18633-34-35-36-37 and 38, NEW YORK. Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany, N. Y. Bids June 24. CD 5/17.

D. Fortunato, Inc., 11 Garfield Ave., Floral Park, N. Y. LB $337,000, Div. I;

Morse Boulger Destructor Co., 205 E. 42 St., New York 17, N. Y., LB $405,426, Div. 2 of refuse disposal plant proj., BABYLON, N. Y. Town Bd., Town Hall, Babylon, N. Y. Bids June 22. CD 6/2.

† National Constr. Co., 767 E. Third St., South Boston, Mass., CA, $794,658, est. $1,000,000. rehabilitation existing facilities, Plattsburg Air Force Base, ENG-30-975-54-276, PLATTSBURG, N. Y. U. S. Eng., 80 Lafayette St., New York, N. Y. Bids May 27. CD 6/2, under LB.

▲ PENNSYLVANIA—State Hy. & Bridge Auth., North Office Bldg., State Capitol, Harrisburg,

C. J. Langenfelder & Son, Inc., 8427 Pulaski. Hy., Baltimore, Md., LB, $1,861,850, constr. 1.41 mi. new four-lane hy. from point six-tenths of a mi. west of Morrisville and extending toward Fallsington, Bucks Co. Bids June 25. CD 6/7.

▲ PENNSYLVANIA—State Hy. Dpt., 506 North Office Bldg., Harrisburg,

D. T. Connelly, 475 Allison Ave., Washington, Pa., CA, $654,229. constr. 2.24 mi. c.-conc. pavement variable 18 to 24 ft. wide; one rein.-con. arch over Narrows Run, from Stoops Ferry to southwest of Carnot, on T. R. 51, Moon Twp., Allegheny Co.;

Latrobe Road Constr. Inc., P.O. Box 150, Latrobe, Pa. CA, $2,962,228. constr. as the downtown interchange and part of the Penn-Lincoln Parkway, 1.65 mi. c.conc. pavement 38 to 49 ft. wide on east-bound

parkway and 38-55 ft. wide on the west-bound parkway, and 38 ft. wide on each side of four-foot divisor on the combined east-bound and west-bound parkway incl. substructure on the East-Bound parkway over B & O. R.R. substructure on Ramp M and the West-bound parkway, grading, drainage, misc. constr., rein.-con. on Second Avenue Ramps R and V and the substructures on Ramps R. T. and V., constr. pedestrian underpass and grading and drainage for relocation of B. & O. R.R., Allegheny Co. Bids June 11. CD 6/15, under LB.

Edward F. Roberts Co., 2622 Columbia Ave., Phila., Pa. CA $63,400, water pressure sys. and sewage ejectors in Market St. Subway, PHILA., PA. Dpt. Procurement, City Hall Annex, Phila., Pa. CD 11/9/44.

MARYLAND—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,

John D. Sheets Constr. Co., 1334 Sulphur Spring Rd., Arbutus, Md. LB, $144,945. steel WF beam bridge to carry Wellham Ave. over Glen Burnie-By Pass, Contr. AA 473-3-520, Anne Arundel Co. Bids June 22. CD 6/9.

MARYLAND—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,

Capital Eng. Co., 4619 Brandywine St. N. W., Wash., D. C. LB, $132,733. single 63 ft. span, steel WF beam bridge to carry relocation of River Rd. over Defense Hy., near Bladensburg, Contr. P. 724-12-320, Prince Georges Co. Bids June 22. CD 6/3.

MARYLAND—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,

Hechler Bros., Inc., Highland Springs, Va. CA, $730,109. grading, drainage, surf. 4.486 mi. Centerville-Warwick Rd., Contr. Q 168-26-220, Queen Anne Co. CD 6/8, under LB.

▲ **MARYLAND**—State Rds. Comn., 108 Lexington St., Baltimore, Zone 2,

Talbott-Marks Co., Box 308, Clarksville, Va. LB, $957,320. grading, drainage, paving 2.522 mi. Northbound lane of dual hy., Baltimore Harrisburg Expressway, Contr. B 578-20-420, Baltimore Co.;

Jas. J. Julian & Co., 405 S. Dupont Rd., Elsmere, Del. LB, $607,052. grading, drainage, surf. second lane, resurf. existing lane, Fruitland, Contr. WI 280-2-120, Wicomico Co.;

E. D. Plummer & Sons, Chambersburg, Pa. LB, $744,153. grading, drainage, wid'n., relocation, surf. 3.224 mi. U. S. Rte. 1, near Conowingo, Contr. H 363-4-420, Harford Co. Bids June 22. CD 6/9.

† **Dist. P. Wks. Officer, Potomac River Naval Command**, Naval Gun Factory, Wash., D. C., rejected bids June 17, high pressure air piping at Naval Ordnance Laboratory, NOY 83689, WHITEOAK, MD. CD 6/3.

Eastern States Constr. Co., 405 S. DuPont Rd., Elsmere, Del., CA, $64,218. sanitary sewers in North Holly Oak, WILMINGTON, DEL. Pres. Levy Court of New Castle Co., Public Bldg., 11 and King Sts., Wilmington, Del. Bids June 22. CD 6/9.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Terminal Constr. Co.**, 194 Hackensack St., Woodbridge, N. J., LB, $5,396,000, general contract;

Jacob Weisberg c/o owner, LB, $633,822, plumbing and gas work; LB, $381,729, heating work;

ARC Electrical & W. R. Scott, 739 Second Ave., New York 16, N. Y., LB, $468,000 electrical work for HOUSING Project N.J. 2-13, Section II, four 13 story elevator apartments, NEWARK, N. J. Housing Auth. of City of Newark, 57 Sussex Ave., Newark, N. J. Bids June 14. CD 5/6.

Beskin-Freeman, Inc., 204 State St., Hackensack, N. J., CA, $500,000, CENTER addn., incl. synagogue, swimming pool and meeting rooms, TEANECK, N. J. Jewish Community Center, Prince St. and Sterling Pl., Teaneck, N. J.

▲ **Catalytic Constr. Co.**, 1528 Walnut St., Phila., Pa., CA, $2,000,000, 1,926 bbl. per day, alkylation unit at Eagle Point Works, WESTVILLE, N. J. The Texas Co., 135 E. 42 St., New York, N. Y. CD 1/12/49.

H. B. Alexander & Son, 315 Vaughn St., Harrisburg, Pa., CA $450,000. RECREATION BLDG., CORNWALL, PA. Pennsylvania Joint Bd. of Almagamated Clothing Workers of America, 1228 Walnut St., Allentown, Pa. Abraham Levy, 1411 Walnut St., Phila., Pa., archt.

Goodman & Bell, Inc., 725 N. 19 St., Allentown, Pa., LB, $871,000, general constr. SCHOOL for Pine Grove area Joint School Sys., PINE GROVE, PA. State Public School Building Auth., 101 S. 25 St., Harrisburg, Pa. Bids June 24. CD 5/25.

† **Vanguard Constr. Co.**, 369 Lexington Ave., New York, N. Y., CA $403,431. DEFENSE FACILITY, No. 36-109-54-250, RICHMOND, PA. U. S. Eng., 121 N. Broad St., Phila., Pa. The Ballinger Co., 121 N. Broad St., Phila., Pa., archt.

▲ **W. C. Homes, Inc.**, 220 N. Church St., West Chester, Pa., Separate Contracts. $4,000,000. RESIDENTIAL DEVELOPMENT, West Goshen Twp., Glyn Ave. etc. WEST CHESTER, PA. William J. Corcoran, 102 N. Church St., West Chester, Pa., archt.

Land & Simmons Co., 3722 Hickory Ave., Baltimore, Md. LB, $370,000., brick, block, concrete, steel men's DORMITORY, WESTMINSTER, MD. Western Maryland College, Westminster, Md. Bids June 21. CD 6/15.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION

La., Gretna—BA 7/14—Jefferson Parish Police Jury, c. conc. paving 8 streets with drainage, driveways, Hotard & Webb, 1030 Amelia Ave., Gretna, engrs.

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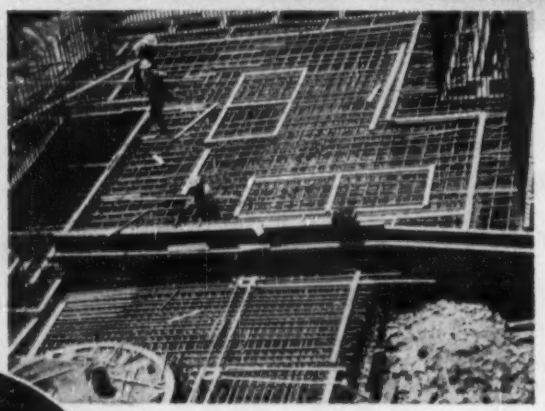

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† **La., Shreveport**—BA 7/15—U. S. Eng., P.O. Box 867, Little Rock, Ark., roads, parking area 56,000 sq. ft. soil cement course, double bit. surf. concrete ramps, gutters, downspouts, Louisiana Ordnance Plant, ENG-30-050-54-63, $100,000. CD 6/25.

† **Florida**—BA About 7/20—U. S. Eng., P. O. Box 4970 Jacksonville, repairs to bulkheads and south jetty at Casey Pass (Venice Inlet), Fla., on Intracoastal Waterway Caloosahatchee, River to Anclote River. CIVENG-08-123-54-58. CD 11/24/43.

† **NORTH CAROLINA**—BA 7/20—Bureau P. Rds., Dpt. Commerce, 1440 Columbia Pike, Arlington, Va.

Watauga Co.—rein.-con. bridge over Hy. U.S. 321 and concrete box culvert, Blue Ridge Parkway, Proj. 2F13.

† **Louisiana**—BA 7/23—U. S. Eng., foot of Prytania St., New Orleans, Bayou Bouef Closure, 250,000 yd. embankment, St. Mary Parish, Inv. 54-251. CD 6/26/46.

Ky., Henderson—BA 7/29—City, City Hall, Contr. V, 7.2 MGD primary type sewage treatment plant and river pumping station; Contr. VI Ohio River interceptor consisting of pumping station together with approx., 1,600 lin. ft. 6 in. c.i. pipe force main, more than 1 mi. 8- to 15-in. gravity sewers, approx. 4,000 ft. 24 in. c.i. force main, approx. 2 mi. 30- to 36-in. gravity sewers. Plans deposit $35. J. Stephen Watkins, 251 E. High St., Lexington, consult. engrs. CD 6/18, under Water Supply.

BIDS ASKED—BUILDINGS

Fla., Miami—HOTEL—Bids Asked—Parkleigh House Corp., 1050 Hollywood Blvd., apartment hotel, $750,000 Martin M. Wehl, 1050 Hollywood Blvd., Hollywood, archt. CD 7/31.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Atkinson Dredging Co.**, Rte. 3, Box 234, Norfolk, Va. LB, $105,997, dredging James River, near Newport News, ENG-44-110-54-30, VIRGINIA. U. S. Eng., foot of Front St., Norfolk, Va. Bids June 17.

▲† **Norfolk Dredging Co.**, Campostella Wharf, Norfolk, Va., LB, $3,236,340, Craney Island Disposal area, ENG.-44-110-54-29, near Norfolk, Norfolk Co., VIRGINIA. U. S. Eng., foot of Front St., Norfolk, Va. Bids June 24. CD 5/4.

† **William H. Singleton Co.**, P. O. Box 392, Hampton, Va. LB, $647,000. boundary-layer control, L-6860, LANGLEY FIELD, VA. National Advisory Committee for Aeronautics, Langley Field, Va. Bids June 22. CD 9/11/52.

† **American Electric Co., Inc.**, 2660 Jefferson Davis Hy., Arlington, Va., CA, $139,700, rehabilitation electrical sys. at Marine Corps Schools. NOY 81454, QUANTICO, VA. P. Wks. Office, Potomac River Naval Command, Naval Gun Factory, Wash., D. C. Bids June 9, awarded June 22. CD 5/17.

† **E. V. Williams & W. H. Scott, Inc.**, 1269 E. Princess Anne Rd., Norfolk, Va., CA, $539,344. airplane parking area, Naval Air Station, NOY 81585, OCEANA, VA. P. Wks. Office, Fifth Naval Dist., U. S. Naval Base, Norfolk, Va. Bids May 27. CD 6/4, under LB.

† **Diamond Constr. Co.**, 4625 Shore Dr., Norfolk, Va. LB, $924,000. exten. resurf. Drydock No. 8, Naval Shipyard, NOY 82854, PORTSMOUTH, VA. P. Wks. Office, Fifth Naval Dist., U. S. Naval Base, Norfolk, Va. Bids June 24. CD 6/1.

† **Cheney Electric Co.**, 1700 Hutchinson Ave., Charlotte, N. C., CA, $135,032, replacement fire alarm cable, MCB, NOY 83272, CAMP LEJEUNE, N. C. P. Wks. Office, Fifth Naval Dist., U. S. Naval Base, Norfolk, Va. Bids June 18. CD 6/3.

▲† **R. H. Wright Constr. Co.**, Fort Lauderdale, Fla., LB, $1,327,000 runway and apron paving and lighting, Marine Corps Air Station, NOY 76255, MIAMI, FLA. Dpt. Navy, P. Wks. Officer, Naval Base, S. C. CD 12/11/52.

▲† **Farnsworth & Chambers, Inc.**, 3018 Leeland St., Houston, Tex., LB, $2,069,989. base; $3,074,399 Alt. facilities for research and development work in field of guidance control of missiles, HUNTSVILLE, ALA. U. S. Eng., Grant St., Mobile 7, Ala. Bids June 22. CD 6/4.

† **Foster & Creighton Co.**, American Natl. Bank Bldg., Nashville, Tenn., LB, $982,873, repairing, strengthening aircraft operational apron, Craig Air Force Base, SELMA, ALA. U. S. Eng., P.O. Box 1169, Mobile, 7, Ala. Bids June 18. CD 6/11.

MISSISSIPPI—State Hy. Dpt., T. C. Robbins, dir. Jackson.

Bower & Johnson Constr. Co., Jackson, Tenn. CA, $71,759, est. $71,000. grade, drain culverts, 0.319 mi. U. S. Hy. No. 82 through Eupora, Proj. F 011-2 (5), Webster Co.;

R. B. Tyler Co., 1446 Levering St., Louisville, Ky. CA, $107,999, est. $108,000. base, double bit. surf. tr. 9.397 mi. Miss. Hy. No. 471 between Brandon and Fannin, Proj. S 0426 (3)A, Rankin Co.;

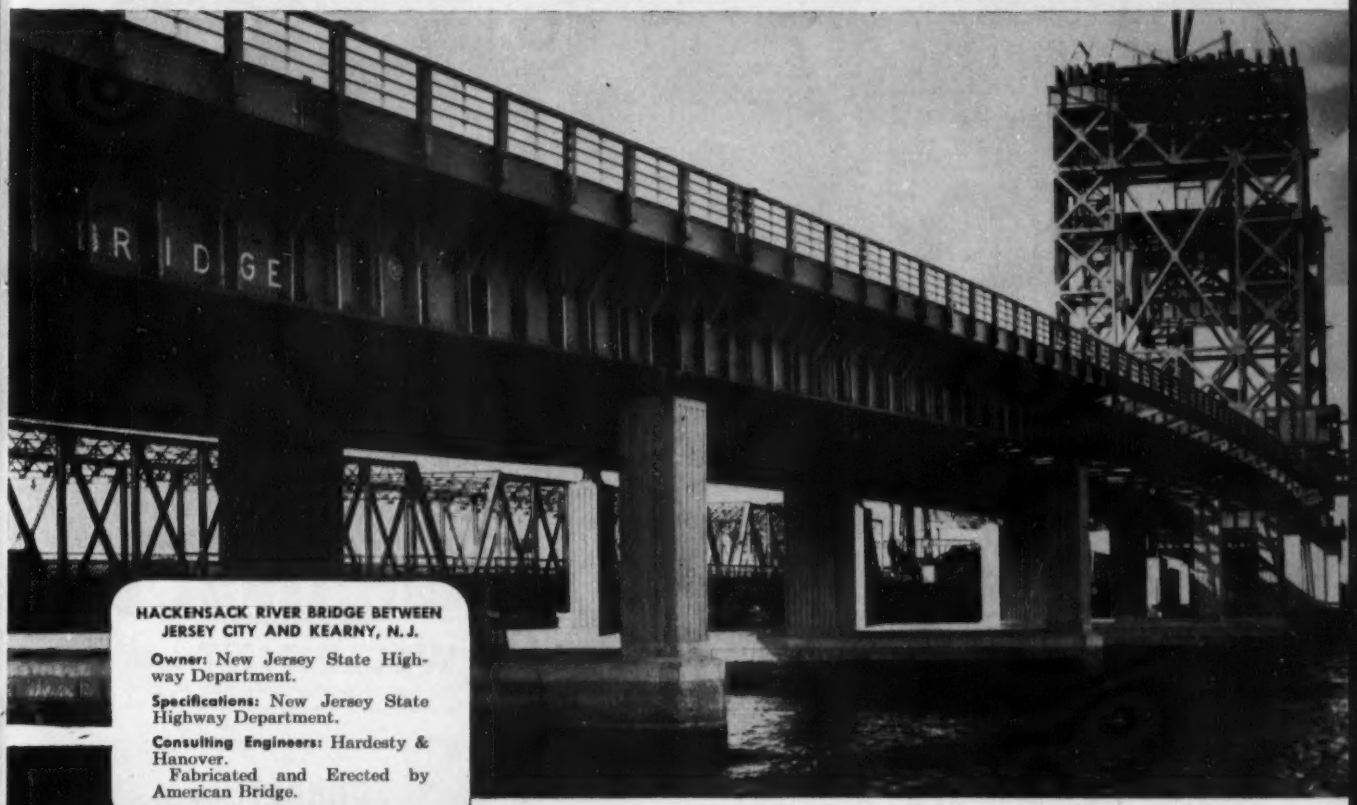
Cobb Bros. Constr. Co., Citizens Bank Bldg., Meridian, Miss. CA, $113,420, est. $113,000. base, double bit. surf. tr. 7.104 mi. Miss. Hy. No. 494 between Little Rock and Schamberville, Proj. S 0442 (2) A, Newton Co.;

Worsham Bros., Corinth, Miss. CA, $110,809, est. $111,000, double bit. surf. tr. 3.436 mi. Miss. Hy. No. 47 between Abbott and Trebiock, Proj. S 0743 (1) A, Clay ad Chickasaw Counties;

J. B. Russell Contractors, Tchula, Miss. CA, $95,570, est. $90,000, base, double bit. surf. tr. 8.95 mi. Miss. Hy. No. 336 between Lafayette Springs and Pontotoc and Miss. Hy. No. 342 between Miss. Hys. No. 41 and 6, Projs. SP 336-1 (1) and SP 342-1 (1), Pontotoc Co. Grand total $499,657. Bids June 22. CD 6/15.

(Continued on page 104)

AMERICAN BRIDGE spans the Hackensack again!



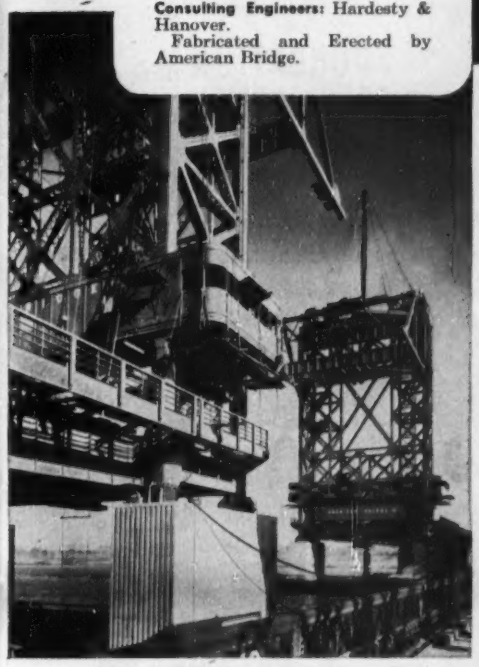
HACKENSACK RIVER BRIDGE BETWEEN JERSEY CITY AND KEARNY, N.J.

Owner: New Jersey State Highway Department.

Specifications: New Jersey State Highway Department.

Consulting Engineers: Hardesty & Hanover.

Fabricated and Erected by American Bridge.



Providing broader roadways and wider channel, new structure on U.S. Routes 1 and 9 between Jersey City and Kearny speeds highway and river traffic!

SPANNING the Hackensack is getting to be a habit with American Bridge. We've done it twice in less than two years. Completing in 1952 a 5613-ft. structure with a 375 ft. plate girder main span on the N. J. Turnpike near Laurel Hill, N. J.; and this year, building a new bridge over the same river on heavily travelled U. S. Routes 1 and 9 between Jersey City and Kearny for the New Jersey State Highway Department.

Replacing a lighter, narrower bascule bridge, the new wider, higher Hackensack River Bridge is an important contribution to both highway and river traffic in this busy industrialized area. The new bridge increases the channel width and shortens operating time and traffic delays.

Carrying two 36-foot roadways, a 4-foot center mall, and two 6-foot sidewalks, this 1,480-ft. bridge is dominated by a 222-ft. thru truss lift span that is supported by towers 149′ high and 81′4″ wide. Seven thousand tons of structural steel were used in the bridge, all of which was fabricated and erected by American Bridge.

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AMERICAN BRIDGE

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SURVEYING NEWS

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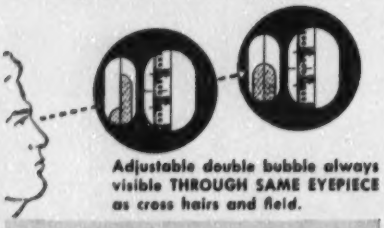

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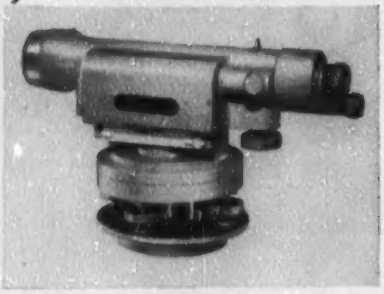

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ADDRESS.....

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(Continued from page 102)

MISSISSIPPI—State Hy. Dpt., T. C. Robbins, dir., Jackson, action deferred June 22, grading, culverts, temporary grav. surf. 7.025 mi. Miss. Hy. No. 448 between Indianola and Shaw, Proj. S0613 (1) A, Sunflower Co. LB, $148,241, est. $130,000; grading, culverts, surf. tr. 1.863 mi. on U. S. Hy. Nos. 49E and 82 between No. 29 and River Bridge, Proj. F U 011-2 (2), Leflore Co. LB, $368,109, est. $365,000; rejected bids June 22, grading, culverts, bridges grav. surf. 12.244 mi. Miss Hy. No. 21 between Forest and Sebastopol, Proj. S 0435 (1)A, Scott Co., est. $133,000; grading, drainage, culverts 6.636 mi. Miss. Hy. No. 492 between Union and House, Proj. S 0437 (2) A, Neshoba Co., est. $95,000; grading, culverts, bridges, grav. surf. course 6.294 mi. Miss. Hy. No. 43 between Natchez Trace Parkway and Canton, Proj. S 0431 (1)A, Madison Co., est. $210,000. CD 6/15.

▲ KENTUCKY—Commonwealth of Ky., Dpt. Hys., Frankfort,
Codell Constr. Co., Winchester, Ky. and Oman Constr. Co., Acklen Park, Nashville, Tenn. CA, $1,862,065. 12½ mi. toll turnpike between Louisville and Elizabethtown, Kentucky Turnpike Proj. No. 1, Bullitt Co. Bids June 25. CD 6/8.

† Project Eng. Inc., 1276 E. Colorado St., Pasadena, Calif., CA, $750,000. propeller dynamoter for propeller testing unit at Arnold Engineering Development Center, propulsion wind tunnel, TULLAHOMA, TENN. U. S. Eng., Tullahoma, Tenn. CD 2/26.

BUILDINGS

LOW BIDS AND CONTRACTS

† Carter-Hassell Contg. Co., Inc., Waco and Naval Base Rd., Norfolk, Va., LB, $453,778, GUIDED MISSILE DEFENSE FACILITY, Special AAA NDA Site N-49, near NORFOLK, VA. U. S. Eng., foot of Front St., Norfolk, Va. Bids June 11.

▲ Southern Eng. & Constr. Corp., 405 A East Franklin St., Richmond, Va., LB, $1,292,801. Northside Junior HIGH SCHOOL, NORFOLK, VA. City School Bd., 402 E. Charlotte St., Norfolk, Va. Bids June 24. CD 6/2.

† Robert H. Pinnix, Gastonia, N. C., CA, $370,224, tank repair SHOPS and servicing facilities, ENG.- 31-075-54-13, FORT BRAGG, N. C. U. S. Eng., 308 Customhouse, Wilmington, N. C. Bids June 17. CD 6/1.

† Kaminer Constr. Co., Inc., P. O. Box 2055, Greenville, S. C., CA, $733,895, POWER PLANT addn., MCAS, NOY 72971, (Cherry Point), CAMP LEJEUNE, N. C. P. Wks. Office, Fifth Naval Dist., U. S Naval Base, Norfolk, Va. Bids June 7. CD 6/15, under LB.

† A. C. Samford, Inc., Albany, Ga., LB, $343,368. BRIG GUARD HOUSE, SECURITY STORAGE HOUSE and SERVICE CLUB, NOY 81257, Spec. 39521, Marine Depot of Supplies, ALBANY, GA. Dpt. Navy, P. Wks. Officer, Naval Base, S. C. Bids June 23. CD 6/4.

East Baton Rouge Parish School Bd., Baton Rouge, La., rejected bids June 15, Dalton Elementary SCHOOL, BATON ROUGE, LA. CD 6/4.

† Clarksville Constr. Co., Clarksville, Tenn. LB, $212,798. 5 battalion HEADQUARTERS bldgs., altering existing barracks, underground steam distr. lines, FORT CAMPBELL, KY. U. S. Eng., Federal Bldg., Nashville, Tenn. CD 7/9/51.

▲ E. I. duPont de Nemours & Co., duPont Bldg., Wilmington, Del. Own Forces. PLANT to mfg. Freon-22 monochlorodifluoromethane, LOUISVILLE, KY.

Sam Nelson Co., Shelbyville, Tenn., CA, $643,615. 4 story, 53-bed brick, steel HOSPITAL, SPRINGFIELD, TENN. Robertson Co., Springfield, Tenn. Bids Jan. 4. CD 12/18.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION

Mich., East Jordan—BA 7/19—City, Alberta Rowland, clk., slips and revetment, $25,000.

† Illinois—BA 7/29—U. S. Eng., 420 Locust St., St. Louis 2, Mo., pressure relief wells and collector system, East St. Louis and vicinity, Illinois (East Side Levee and Sanitary District) Proj. Item V-A (2), Parts 1 and 2, Madison and St. Clair Counties, CIVENG-23-065-54-127. Bids Apr. 14 rejected. CD 4/21, under LB.

BIDS ASKED—BUILDINGS

O., University Heights—DORMITORY—BA 7/14—John Carroll University, University Heights, 3 story, bsmt. dormitory for 230 students. Plans deposit $25. Small, Smith & Reeb, 1010 Euclid Ave., Cleveland 14, archts. CD 12/15/52.

O., Hillsboro—SCHOOL—BA 7/20—Hillsboro School Dist., Hillsboro, Webster Elementary School. $675,000. CD 11/10.

O., Boardman—SCHOOL—BA 7/22—Bd. Educ., Boardman High School Bldg., Boardman, grade school. Plans deposit $25. Kling & Frost, 661 Wick Ave., Youngstown, archts. CD 3/1.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ Charles F. Smith & Son, Inc., 118 Spiera Dr., Dayton, O., CA $1,336,003, constr. 7 mi. 4 ft. water main from Kent to AKRON, O. City, Leo Walter, Serv. Dir., Municipal Bldg., Akron, O. Bids June 11. CD 6/18, under LB.

Shullo Constr. Co., 1200 Home St., Akron, O., CA $198,198, Camp Brook trunk storm sewer, AKRON, O. City, Leo Walter, Serv. Dir., City Hall. Bids June 18. CD 6/8.

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Schirmer Schneider Co., 2719 Detroit Ave., Cleveland 13, O., CA $315,398, est. $350,000. five rapid transit stations, CLEVELAND, O. Cleveland Transit Sys., Eng. Dpt., 1022 Carnegie Ave., Cleveland 15, O. Bids June 18, awarded June 24. CD 6/3.

▲ ILLINOIS—State Div. Hys., Springfield,

Howell Eng. Co., 202 W. Willow St., Carbondale, Ill. LB, $135,228, substructure, structural steel handrails for viaduct over Illinois Central R. R., and 3 box culverts F.A. 14, Jackson Co.;

States Imprvt. Co., 30 N. LaSalle St., Chicago, Ill. LB $515,368, substructure, structural steel for bridge over Lake Decatur and Grade separation on U. S. 36, Decatur, Mason Co.;

Mississippi Valley Structural Steel Co., 2100 E. Eldorado St., Decatur, Ill., LB, $215,541. furnishing structural steel for bridge over Lake Decatur and grade separation, U. S. 36, Decatur, Macon Co.;

M. Hoeffken Co. & Hoeffken Bros. Inc., 222 W. "B" St. Belleville, Ill., LB, $311,208, box culverts connecting and extending 2 existing bridges and adjoining box culvert all on Ill. 159, St. Clair Co.;

American Bridge Div., U. S. Steel Corp., 208 S. LaSalle St., Chicago 4, Ill., LB, $81,208, furnishing structural steel and metal handrail for bridge over Big Muddy River on F.A. 14, Murphysboro, Jackson Co.;

Shappert Eng. Co., E. Menominee and Blaine Sts., Belvidere, Ill., LB, $107,489, 1 bridge over Coon Creek on U. S. 20, Boone Co. Bids June 22. CD 6/14.

▲ ILLINOIS—State Div. Hys., Springfield,

Triangle Constr. Co., 480 N. Evergreen Ave., Kankakee, Ill., LB, $313,262, c. conc. 0.77 mi. S.B.I. 49 Kankakee Co.; LB $291,101, conc. base 202 mi. and wid'n. 1 existing bridge U. S. 52, Kankakee Co.; LB $141,439, bit. resurf. 2.02 mi. U. S. 52, Kankakee Co.;

Bridges Paving Co., 1411 Central Industrial Rd., St. Louis 10, Mo., LB, $161,343, bit. resurf. 8.22 mi. Ill. 109, Jersey Co.; LB $121,278, c. conc. base course wid'n. 8.21 mi. Ill. 109, Jersey Co.;

Midwest Pre-Cote Co., 7618 E. 17 St., Kansas City, Mo., LB, $70,320, bit. resurf. 2.46 mi. U. S. 24, Brown Co; LB $140,440, bit. resurf. and patching 7.27 mi. U. S. 24, Fulton and Schuyler Counties;

Gunther Constr. Co., 600 E. Main St., Galesburg, Ill., LB $207,565, bit. resurf. 8.01 mi. Ill. 116, Fulton Co.;

I. D. Lain Co., 1901 E. Adams St., Springfield, Ill. LB, $269,922, c. conc. base course wid'n. 6.86 mi. conc. base course 105 mi. Ill. 116, Fulton Co.;

McCann & Co., Inc., 812 Reisch Bldg., Springfield, Ill. LB, $166,515, c. conc. base course 0.48 mi. and base course widn. 1.91 mi. U. S. 24, Brown Co.;

Diamond Constr. Co., Elvaston, Ill., LB, $87,988 bit. on grav. or crushed stone 5 mi. F.A.S. 592, Adams Co.;

Champaign Asphalt Co., 310 E. Bradley Ave., Champaign, Ill., LB, $184,859, bit. resurf., patching 7.02 mi. Ill. 10 and U. S. 45, 136 and 150, Champaign and Vermillion Counties;

Rockford Black Top Constr. Co., 1615 Westchester Dr., Rockford, Ill., LB, $76,515, bit. resurf. 5.07 mi. US 20 and 52, Ill. 26, 73, 78, Carroll, Jo Daviess and Stephenson Counties;

McCarthy Imprvt. Co., 601-3 Kahl Bldg., Davenport, Ia., LB, $104,170, bit. resurf. 7.48 mi. Ill. 2 and 92 and U. S. 30, Bureau, Henry and Whiteside Counties;

Swords & Dietz, Inc., 107 S. Jefferson Ave., Peoria, Ill., LB, $71,476, crushed stone surf. 3.15 mi. F.A.S. 223, Henry Co.;

E. T. Simonds Constr. Co., Box 356, Carbondale, Ill. LB, $313,962, c. conc. base course 0.81 mi. c. conc. base course wid'n. 6.02 mi. U.S. 51, Jackson and Perry Counties;

Chas. G. Gilmore Asphalt Products, Inc., Anna, Ill, LB, $158,805, bit. resurf. 6.84 mi. U.S. 51 Jackson and Perry Counties;

E. M. Melahn Constr. Co., Algonquin, Ill., and **Chas. E. Giertz & Son**, 57 Douglas Ave., Elgin, Ill., LB $198,-420 c. conc. 0.62 mi. N. State St., (Ill. 31) Elgin, Kane Co.;

Strunk Bros., Tiskilwa, Ill., LB $84,539 c. conc. 0.45 mi. Ill. 26, Lee Co.;

J. P. Constr. Co., 1750 State St., Chicago Heights, Ill., LB, $129,633, c. conc. base course wid'n. 1.2 mi. Ill 10, Logan Co.;

Sankey Bros. Inc., 402 Illinois Bldg., Springfield, Ill. LB, $66,395, bit. resurf. 1.2 mi. Ill. 10, Lincoln, Logan Co.;

E. A. Cullinan & Son, Tremont, Ill., LB $79,547 grav. on crushed stone base course 3.87 mi. F.A.S. 561, Logan Co.;

Maclair Asphalt Co., 6000 Collinsville Rd., East St. Louis, Ill., LB, $107,161, bit. resurf. 4.47 mi. U.S. 40, Madison Co.;

M. Hoeffken Co. & Hoeffken Bros., Inc., 222 W. "B" St., Belleville, Ill., LB, $157,947 c. conc. base course wid'n. 1.5 mi. on City U.S. 66, Madison Co.;

Joyce Bros. Constr. Co., 715 Meyers Bldg., Springfield, Ill., LB, $264,939, c. conc. base course 2.27 mi. Ill. 29 Sangamon and Christian Counties;

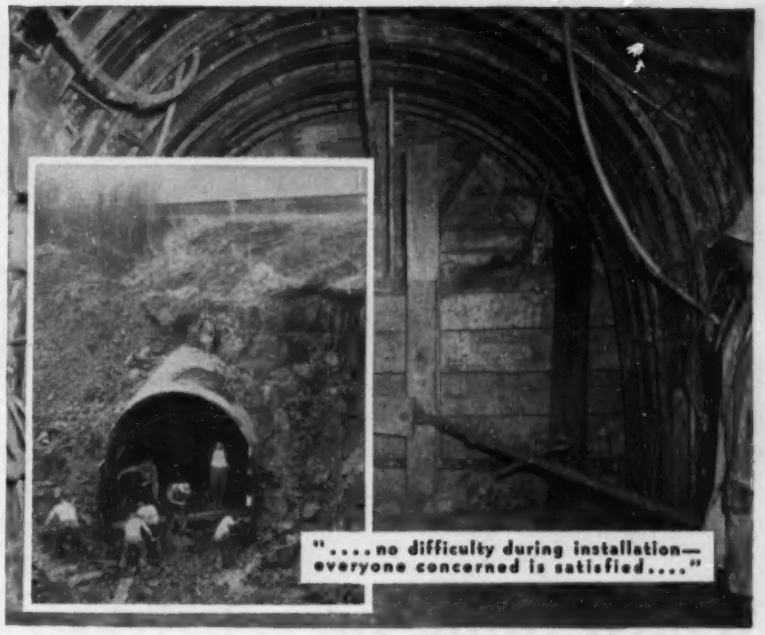
Sangamo Constr. Co., 700 N. MacArthur Blvd., Springfield, Ill., LB, $62,153, bit. resurf. 2.27 mi. Ill. 29, Sangamon and Christian Counties;

Hollenbeak Constr. Co., 726 S. 22 St., Quincy, Ill., LB, $161,125, c. conc. base course 1.06 mi. U.S. 24 and 67 in Rushville and c. conc. base wid'n. 2.11 mi. U.S. 67, Schuyler Co.;

R. A. Cullinan & Sons, Remont, Ill., LB, $132,179 bit. resurf., patch 8.86 mi. Ill. 9, Tazewell and McLean Counties;

Gallagher Asphalt Co., 181 and Indiana Ave., Thornton, Ill., LB, $60,816, bit. 4.92 mi. F. A. S. 308, Will Co. Bids June 22. CD 6/14.

Howell Eng. Co., Box 356, Carbondale, Ill., LB $67,672, grading, drainage, base constr., bit. surf. runway, lighting exten. at Murdale Airport, MURPHYSBORO-CARBONDALE, ILL. Mardale Airport Auth., Carbondale, Ill. Bids June 15. (Correction—contractors name). CD 6/21, under LB.



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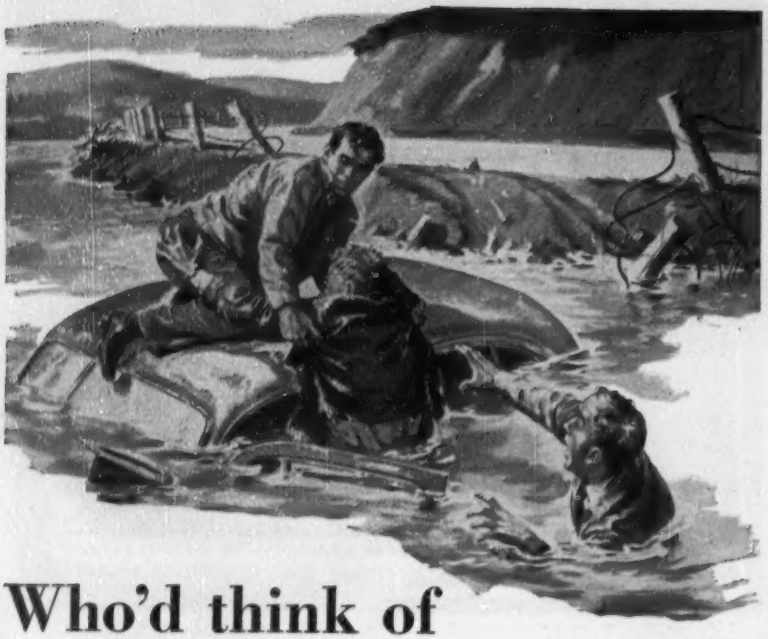

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(Based on Company File #96B12246)

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WISCONSIN—State Hy. Comn., State Hy. Office Bldg., Madison,

Bushman Constr. Co., 4635 Wyandotte St., Kansas City 12, Mo., CA, **$355,312**, Contract 1, 2.019 mi. F 010-1 (4) and F-017-3 (7), St. Hy. 26 and U.S. Hy. 151, Fond du Lac Co. Bids June 8. CD 6/15, under LB.

Angell Constr. Co., 200 N. Detroit St., Lansing, Mich. CA **$112,667**. 17,800 lin. ft. c. conc. various streets, JACKSON, MICH. City, 120 N. Mechanic St., Jackson, Mich. Bids May 18. CD 5/12.

Oak Constr. Co., 220 E. 7 St., Royal Oak, Mich. CA **$131,006**. wid'n. 8 to 10 mi. Coolidge Rd. from 2 to 4 lanes concrete between 8 and 10 Mile Rds. OAK PARK, MICH. City, Harold K. Schone, city mgr., Oak Park, Mich. Bids June 21. CD 6/9.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Gillmore Carmichael Olson Co.**, 1873 E. 55 St., Cleveland, O., CA Est. **$2,000,000**. 225,000 sq. ft. FACTORY addn. to house copper rod mill, etc., WARREN, O. Packard Electric Div., General Motors Corp., General Motors Bldg., Detroit, Mich. CD 6/14.

▲ **Hagerman Constr. Co.**, 403 Strauss Bldg., Fort Wayne, Ind., CA, two buildings;
Johnson, Drake & Piper, 112 N. 7 St., Terre Haute, Ind., two buildings;

Ralph Rogers, Inc., Bloomington, Ind., CA, installing outside utilities and site work, for four 92-single, 52-double bedroom APARTMENTS at university, BLOOMINGTON, IND. Indiana University Bd. Trustees, Bloomington, Ind. Total est. **$2,000,000**. Bids Mar. 17. CD 2/26.

Lawrence J. Snyder Constr. Co., Muncie, Ind., CA, **$310,000** CHURCH, MUNCIE, IND. College Ave. Methodist Church, 100 N. College Ave., Muncie, Ind. CD 1/6/53.

V. H. Juerling Constr. Co., Richmond, Ind., CA, **$313,000**, est. $325,000. Y.W.C.A. BLDG. addn., RICHMOND, IND. Richmond Young Womens Christian Assn., Richmond, Ind. Bids June 15, awarded June 25. CD 6/1.

DeWright Constr. Co., Kalamazoo, Mich. CA **$89,995**. steel, masonry MAINTENANCE BLDG., Western Michigan College of Education, KALAMAZOO, MICH. State, A. N. Langius, dir. State Bldg. Dpt., Lewis Cass Bldg., Lansing, Mich. Bids May 5. CD 4/9.

John Culizzi, 118 N. Lorch St., Lansing, Mich. Owner Builds. **$135,000**. 1 story, masonry warehouse, LANSING, MICH.

Perron Constr. Co., 6525 Lincoln St., Detroit, Mich. CA **$97,800**. masonry car DELIVERY BLDG. alterations, LANSING, MICH. Oldsmobile Div., General Motors Corp., 1014 Townsend St., Lansing, Mich. Argonaut Realty Div., General Motors Corp., General Motors Bldg., Detroit, Mich., engrs. CD 7/11/50.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

Okla., Carmen—GAS LINES—BA 7/15—City, Carmen, natural gas transmission line and distr. $100,000. Plans deposit $10. Lee M. Bush & Co. Colcord Bldg., Oklahoma City, engr. CD 5/14.

† **S. D., Rapid City**—WATER TREATMENT PLANT—BA 7/20—U. S. Eng., 1709 Jackson St., Omaha, Neb., water treatment plant for photo reconnaissance laboratory, Ellsworth Air Force Base, Inv. 25-066-54-91. CD 11/12/51.

† **Ia., Sioux City**—STORAGE, etc.—BA 7/21—U. S. Eng., 1709 Jackson St., Omaha, Neb., storage, ammo. and shop Sioux Air Force Base, Inv.-25-066-89. CD 2/2/54.

† **Tex., Wichita Falls**—UTILITIES—BA 7/22—U. S. Eng., Box 61, Tulsa 2, Okla., addnl. utilities, Shepherd Air Force Base, Inv. No. ENG-34-066-54-81. $75,000-$125,000. Extended date. CD 6/14.

Mo., St. Joseph—SWIMMING POOL—BA 7/23—City, Park Bd., 2 swimming pools, $125,000. K. H. Larkin & Assoc., Wirthman Bldg., Kansas City, Mo., engrs. CD 12/24.

† **Kansas**—BA 7/29—Bureau Reclamation, Dpt. Interior, Superior, Neb., Courtland Canal, Sta. 1581 plus 00 to 1740 plus 30 laterals, sublaterals and drains, Bostwick Division, Missouri River Basin Proj., near Webber, Spec. DC 4199; adv. ENR 7/8. CD 8/14.

† **New Mexico**—BA 8/5—Bureau Reclamation, Dpt. Interior, Albuquerque, furnishing labor and materials for rehabilitation of drains, Unit SW-2, Middle Rio Grande Proj., near Socorro and San Antonio, Spec. No. DC 4197, adv. ENR 7/8. CD 9/7/44.

Tex., Houston—Bids Asked—A. Mascari, 2130 Chantilly St., c.i. water lines. $40,000.

Tex., Houston—Bids Asked—A. Mascari, 2130 Chantilly St., sanitary sewers, $62,500; storm sewers, $60,000. CD 6/22.

Tex., Houston—Bids Asked—A. Mascari, 2130 Chantilly St., constr. and asph. paving streets. $65,000.

Tex., Houston—TELEVISION TRANSMITTER BLDG., etc.—Bids Asked—Houston Consolidated Television Co., c/o Roy Hoffheinz, City Hall, 2 story, masonry 50,000 watt television transmitter bldg., 1,049 ft. steel tower. CD 3/8.

BIDS ASKED—BUILDINGS

Colo., Cortez—SCHOOL—BA 7/26—Bd. Educ., School District No. 1, Montezuma Co., grade school, $320,000. William F. Andres, 2810 Fillmore, Denver, Colo., engr. and archt. CD 12/21.

Tex., Longview—FACTORY—Bids Asked—Bell & Gossett Co., Longview, factory. $500,000. CD 2/18.

(Continued on page 108)

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. . . and build new land areas, too!

Everyone agrees that mosquito control is necessary—both for health reasons and to eliminate a pest. But not everyone knows the best answer to the problem. Ellicott engineers can show you how—in case after case—a *portable*, versatile Ellicott Dragon* Dredge assigned to swamp removal duties *permanently* ended mosquito infestation.

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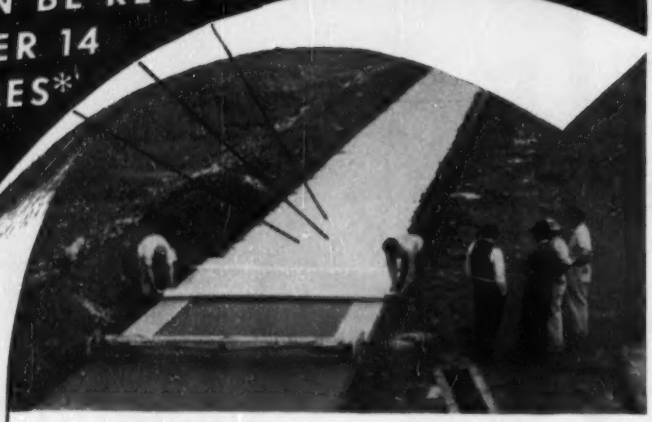

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NEW YORK CITY — SALT LAKE CITY

(Continued from page 106)

SOON LETS CONTRACT—BUILDINGS

Tex., Houston—PLANT—Hughes Tool Co., 5425 Polk St., soon lets contract, 2 story 31,000 sq. ft. plant locker bldg. Lockwood & Andrews, Union Natl. Bank Bldg., engrs. CD 2/19/53.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MINNESOTA—State Hy. Dpt., 1246 University Ave., St. Paul,

Concrete Constr., Inc., Litchfield, Minn. CA **$116,980**, Bridge No. 6873 over Two Rivers 1 mi. north of Hallock, Kittson Co.; CA **$60,249**. Bridge No. 6874 over Two Rivers 0.4 mi. north of Northcote, Kittson Co. Bids June 11. CD 5/27.

▲ **MINNESOTA**—State Hy. Dpt., 1246 University Ave., St. Paul,

Central States Constr. Co., Crosby, Minn. CA **$689,680**. c. conc. 12.9 mi. between Litchfield and TH 7, McLeod and Meeker Counties;

Strom Constr. Co., Moorhead, Minn. CA **$251,910**. grading, 7.3 mi. between North Line of Jackson Co. 1 mi. south of Bergen, Jackson Co.;

DeRuyter Bros., Willmar, Minn. CA **$201,757**. grading 12 mi. between Grove City and TH 55, Meeker Co.;

V. J. Volden, Farmington, Minn. CA **$70,188**. grav. base, road-mixed bit. surf. 2.2 mi. between Long Prairie and 2.1 mi. north, Todd Co.;

Hector Constr. Co., Caledonia, Minn. CA **$129,090**. grav. base, plant-mixed bit. surf. 0.9 mi. Janesville, Waseca Co.;

Megarry Bros., St. Cloud, Minn. CA **$208,130**. grav. base, plant-mixed bit. surf. 13 mi. between 1.8 mi. east of Albany and 1 mi. east of St. Joseph, Stearns Co.; CA **$322,293**. grav. base, plant-mixed bit. surf. 14.4 mi. between Red Wing and Lake City, Goodhue Co.;

W. Hodgman & Sons, Fairmont, Minn. CA **$215,214**. grav. base, plant-mixed bit. surf. 16.5 mi. between 1 mi. west of Lismore and Lake Wilson, Murray and Nobles Counties;

O. B. Ashbach & Sons, 2975 Hamline Ave. N., St. Paul, Minn. CA **$273,208**. b. conc. surf. 5.3 mi. University Ave. between W. limits of St. Paul and Rice St., Ramsey and Hennepin Counties. Grand total $2,361,480. Bids June 11. CD 5/27.

Kahlstorf Bros., Lake George, Minn. CA **$70,525**. grading 3.4 and 3.9 mi. near Bowlus Pierz and Freehem respectively, LITTLE FALLS, MINN. Morrison Co., L. J. Billstein, aud., Little Falls, Minn. Bids June 15. CD 5/21.

C. L. Stodolka, Little Falls, Minn. CA **$63,561**. grav. base, road mixed bit. surf. 8 mi. between TH 12 4.3 mi. north of Correll and N. line of Big Stone Co., ORTONVILLE, MINN. Big Stone Co., G. W. Shaw, aud., Ortonville, Minn. Bids June 15. CD 5/26.

Red Lake Co., A. Prenevost, aud., Red Lake Falls, Minn. rejected bids June 16, grav. base, road-mixed bit. surf. 4.4 mi. between Oklee and SAR 1, RED LAKE FALLS, MINN. LB **$92,314**. Will re-advertise. CD 5/26.

Rajala Contg. Co., Cohasset, Minn. CA **$66,231**. grading, grav. base surf. 8 mi. between Mississippi River bridge near Ball Club and W. end of Mississippi River bridge at E. line of Cass Co., WALKER, MINN. Cass Co., L. C. Peterson, aud., Walker, Minn. Bids June 16. CD 5/26.

Gjellefald Assocs., Forest City, Ia., CA, **$61,309**, sewers, ALGONA, IA. City, Algona, Ia. Bids June 1. CD 6/21, under LB.

† **W. A. Klinger Co.**, 201 Benson Bldg., Sioux City, Ia., LB, **$209,770**, hydrant refueling sys. and bulk storage facilities, Sioux City Air Force Base, Inv-25-066-54-99, SIOUX CITY, IA. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids June 24. CD 6/1.

† **Dean Roten**, Searcy Ark., CA, **$64,232**, est. $72,515 fuel and oil storage and distr. facilities, Little Rock Air Force Base, ENG-03-050-54-50, JACKSONVILLE, ARK. U. S. Eng., P.O. Box 867, Little Rock, Ark. Bids June 22, awarded June 23. CD 6/17.

Rhoades Constr. Co., Newton, Kan. CA **$46,550**. WW imprvs., NEWTON, KAN. City, Newton, Kan. Black & Veatch, 4706 Broadway, Kansas City, Mo., engrs. Bids June 15.

▲† **Bushman Constr. Co.**, 4635 Wyandotte St., Kansas City, 12, Mo. CA **$3,680,278**. airfield pavement drainage, FY-53, Forbes Air Force Base, Inv.-23-028-54-60, TOPEKA, KAN. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. CD 5/10, under LB.

† **Bayou Constr. Co.**, 3114 Navigation Blvd., Houston, Tex., LB **$45,436**, est. $75,000. Inv. No. 167-54, constr. embankments, etc. for floodwaters retarding, Elm Fork Watershed of Trinity River Watershed, near St. Jo, Montague Co.;

Roland L. Scherer, Weatherford, Tex., LB **$36,600**, est. $75,000. Inv. No. 174-54, constr. earth-fill embankments, pipe outlets, etc. as a floodwater retarding proj., Elm Fork Watershed of Trinity River Watershed, St. Jo, Montague Co., TEXAS. Soil Conservation Service, 3600 McCart St., Fort Worth, Tex. Bids June 14. CD 5/27.

† **Atlantic Gulf & Pacific Co.**, 905 Citizens State Bank Bldg., Houston, Tex., LB **$286,144**, est. $750,000. dredging in Houston Ship Channel, vicinity Huntington Bayou to Sim's Bayou, Inv. No. CIVENG-41-243-54-78, Harris Co., TEXAS. U. S. Eng., 606 Santa Fe Bldg., Galveston, Tex. Bids June 22. CD 6/3.

† **Bauer-Smith Dredging Co.**, Box 259, Port Lavaca, Tex., and Rte. 1, Box 289, Alvin, Tex., LB **$127,211**, est. $250,000. dredging assembling basin, entrance channel and constr. 28 mooring dolphins, Gulf Intracoastal Waterway, Port Bolivar, Inv. No. CIVENG-41-243-54-79, TEXAS. U. S. Eng., 606 Santa Fe Bldg., Galveston, Tex. Bids June 22. CD 6/11.

TEXAS—State Hy. Comn., Austin, cancelled bids to have been opened July 13, grading, structures, base, surf. 7.085 mi. Hy. FM981 and 1629, Proj. S 1285 (1), etc., Collin and Fannin Counties; grading, structures, base, surf. 0.587 mi. Hy. FM 1488, Proj. C 523-10-1, Montgomery Co. CD 6/21.

TEXAS—State Hy. Comn., Austin, cancelled bids to have been opened July 14, grading, structures, base, surf. 1.287 mi. Hy. FM 109, Proj. C 716-2-7, Colorado Co.; grading, structures, base and surf. 4.924 mi. Hy. FM 902, Proj. S 1931 (1), Grayson Co.; grading, structures, shell, concrete base and b. conc. 0.298 mi. Hy. SH III, Proj. C 346-7-6, Jackson Co. CD 6/21.

Liberty County Water Control Dist. 2, Liberty, Tex. Own Forces. $60,000, sanitary sewer collection lines, LIBERTY, TEX. CD 1/25.

Liberty County Water Control Dist. 2, Liberty, Tex. Own Forces. $35,000, c.i. water lines, LIBERTY, TEX.

James Martin Hill, Jr., Builder, Pasadena, Tex., Own Forces. $62,500, constr. new streets, asph. paving, PASADENA, TEX.

James Martin Hill, Jr., Builder, Pasadena, Tex., Own Forces. $60,000, natural gas lines, PASADENA, TEX.

James Martin Hill, Jr., Builder, Pasadena, Tex., Own Forces. $61,000, sanitary sewers; $60,000, storm sewers, PASADENA, TEX. CD 6/7.

James Martin Hill, Jr., Builder, Pasadena, Tex., Own Forces. $36,000, earthwork, grading, PASADENA, TEX.

James Martin Hill, Jr., Builder, Pasadena, Tex. Own Forces. $38,100, c.i. water lines, facilities, PASADENA, TEX.

H. B. Zachry Co., c/o Constr. Div., Box 2570, San Antonio, Tex., CA $624,676. street imprvs. and asph. paving, PORT ISABEL, TEX. City, Port Isabel, Tex. Bids June 7. CD 6/18, under LB.

† **COLORADO**—Bureau P. Rds., Dpt. Commerce, Bldg. 401 Denver Federal Center, Denver.

Inland Constr. Co., Hynds Bldg., Cheyenne, Wyo., CA, $288,994, 20.759 mi. Forest Hy. Proj. 24-A-5, B-3, C3, D4, Willow Creek Pass, Grand Co. Bids June 24. CD 6/15.

R. A. Reither & R. A. Waffersmith, Commonwealth Bldg., Denver, Colo., CA, $285,117, est. $385,000, 129.6 mi. new electric distr. sys. and imprvs. to 20.7 miles, Nucla, San Miguel Co., COLORADO. San Miguel Power Assn., Nucla, Colo. Miner & Miner, 905 16 St., Greeley, Colo., engrs. and archts. Awarded June 15. CD 4/29/53.

† **Harold P. Doty**, 328 Virginia St. S.E., Albuquerque, N. M., LB $68,473, est. $50,192, drilling pilot hole and five experimental wells, Middle Rio Grande Proj., Spec. DC 4181, Bernalillo Co., NEW MEXICO. Bureau Reclamation, Dpt. Interior Bldg., Albuquerque, N. M. Bids June 15.

BUILDINGS

LOW BIDS AND CONTRACTS

Slavin Development Co., 8230 Forsyth Blvd., Clayton 24, Mo. Owner Builds. $350,000. 19 ranch type RESIDENCES on ¾ acre sites in Dogwood Lane area, LADUE (ST. LOUIS 24 P. O.), MO.

Mayer-Raisher Bros., Inc., 119 N. 7 St., St. Louis 1, Mo. Owner Builds. $650,000. forty-four 1 and 2 story, brick, frame RESIDENCES, Hill'n Dale subdivision on 20 acre site on east side of Dielman Rd. north of Old Bonhomme Rd., ST. LOUIS COUNTY, MO.

▲ **Glaywen Development Co.**, 6635 Delmar Blvd., St. Louis 5, Mo. Owner Builds. $1,000,000. 300 RESIDENCES in Glaywen Subdivision in Winchester just west of Sulphur Springs Rd. and south of Manchester Rd. in St. Louis County, WINCHESTER, MO.

Southwest Mfg. Co., E. 14 and Bond Sts., Little Rock, Ark., Own Forces, $150,000, 1 story, 49,000 sq. ft., steel, concrete block, PLANT expansion, LITTLE ROCK, ARK. Bruce Anderson, Wallace Bldg., Little Rock, Ark., archt.

D. C. Bass & Sons, Enid, Okla. CA $506,235. COURT HOUSE addn., OLATHE, KAN. Johnson Co., Olathe, Kan. Bids June 16. CD 7/1/53.

Cowen Constr. Co., Shawnee, Okla., CA $326,600. dairy products PLANT and equipment, ARDMORE, OKLA. Colvert Dairy Products Co., Ardmore, Okla. CD 5/5.

Walco Eng. & Constr. Co., 2408 E. 4 St., Tulsa, Okla. CA Approx. $225,000. gasoline extraction PLANT and pumping equip. NEWKIRK, OKLA. Wunderlich Development Co., Winfield, Kan. Awarded June 10.

E. E. Eisenhauer, S. Staples St., Corpus Christi, Tex. CA $318,405. 1 story, masonry SHOPPING CENTER, concrete slab fdn., CORPUS CHRISTI, TEX. Ray Peterson, 439 Old Robstown Rd,, Corpus Christi, Tex. CD 4/5.

▲ **J. S. Norman Building Corp.**, 8400 Long Point St., Houston, Tex., CA $331,116, 33 DWELLINGS; CA $379,310, 37 DWELLINGS; CA $314,445, 28 DWELLINGS, HOUSTON, TEX. Grand total $1,024,879. Ridgecrest Corp., c/o J. S. Norman, 8400 Long Point St., Houston, Tex. CD 1/11.

▲ **Western United Realty Co.**, c/o Lazy Springs Acres, Houston, Tex., Own Forces. $358,500, 35 frame DWELLINGS, concrete slab fdn.; $368,150, 32 frame, brick trim DWELLINGS, concrete slab fdn.; $375,000, 40 frame DWELLINGS, concrete slab fdn. HOUSTON, TEX. Grand total $1,101,650. CD 11/5.

Los Fresnos Canning Co., Los Fresnos, Tex., Purchases Sub-Contracts. $90,000. WAREHOUSE, LOS FRESNOS, TEX. CD 6/20.

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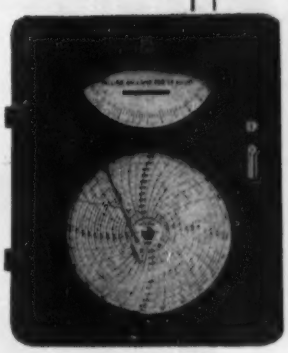

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▲ [redacted] & Sonderlinn, 240 [redacted], [redacted], LB, $1,596,890, general contract;
Crabb Plumbing Co., 1048 12 St., Denver, Colo., LB $394,568, plumbing and heating work for 1, 2 and 3 stories, 140,000 sq. ft., brick, stone, Roscoe Hill Junior High SCHOOL, DENVER, COLO. School District No. 1, City and Denver Co., 414 14 St., Denver, Colo. Bids June 23. CD 6/8.

N. G. Petry Constr. Co., 1114 W est 7 Ave., Denver, Colo., CA, $300,000, 1 story, 40,000 sq. ft. and 15,000 sq. ft. two WAREHOUSES and OFFICE BLDGS., DENVER, COLO. Colorado Fuel & Iron Corp., Continental Oil Bldg., Denver, Colo. Charles D. Strong, 933 Sherman St., Denver, Colo., engr. and archt. Awarded June 16.

▲ N. G. Petry Constr. Co., 1114 West 7 Ave., Denver, Colo., CA, $1,405,000, 6 story main bldg., 2 below grade 100x200 ft., LIBRARY, 2 story circular North Wing with auditorium in bsmnt., remodeling existing 100x150 ft. garage on west as one story annex, DENVER, COLO. City, Library Comn., Colfax and Bannock Sts., Denver, Colo. Bids June 16, awarded June 21. CD 6/22, under LB.

John R. Pearse, 1223 Bannock St., Denver, Colo., LB, $384,000, 1 story, bsmnt., 22,500 sq. ft. 35 bed county HOSPITAL, GLENWOOD SPRINGS, COLO. Garfield County Hospital Assn., Glenwood Springs, Colo. Bids June 18. CD 6/8.

Lloyd M. Carney, Greeley, Colo., CA, $565,862, general contract 1 story, brick Heath Junior HIGH SCHOOL, GREELEY, COLO. School District No. 6, Weld Co. Greeley, Colo. Bids June 2, awarded June 18. CD 6/17, under LB.

R. F. Ball Constr. Co., 333 E. 1 St., Denver, Colo., CA, $648,427, general contract three 1 story, part bsmnt., 59x285 ft. brick, steel SCHOOLS, LAKEWOOD, COLO. Jefferson County School Dist. R-1, 1580 Yarrow St., Lakewood, Colo. Bids June 15.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

† Idaho—BA 8/17—Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo., furnishing two 96-inch ring follower gates with integral hydraulic hoists, hydraulic gate hangers, gate position indicators and one set of handling equip. for Palisades Dam, Palisades Proj., Spec. DS 4200; adv. ENR 7/8. CD 9/14/44.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† IDAHO—Bureau P. Rds., Dpt. Commerce, 609½ Bannock St., Boise,

Pickett & Nelson, Idaho Falls, Idaho, LB, $149,853, grading, surf., bit. 12.127 mi. Strawberry-Sharon Hy., Idaho FHP 42-A-3, Franklin and Bear Lake Counties.

▲ Utah Constr. Co., Box 1590, Salt Lake City, Utah, CA $2,423,004, furnishing labor and materials for Wanship Dam, Weber Basin Proj., near Wanship, Spec. 4170, UTAH. Bureau Reclamation, Dpt. Interior, Ogden, Utah. Bids June 10. CD 6/15, under LB.

▲ WASHINGTON—State Hy. Comn., Olympia,

Ericksen Paving Co., Bellevue, Wash., CA, $1,024,719, b.conc. 6.221 mi. Primary State Hy. No. 1, Lewis Co. Bids June 22. CD 6/9.

† Puget Sound Bridge & Dredging Co., 2929 16 Ave. S. W., Seattle, Wash., LB, $262,085, est. $178,020, channel dredging at five bars between Fisher-Stella and Wauna, Columbia River, CIVENG-35-026-54-152, OREGON-WASHINGTON. U. S. Eng., Pittock Block, Portland, Ore., Bids June 22. CD 5/24.

† Larson Constr. Co., 32 and Franklin Sts., Astoria, Ore., CA, $677,400, cofferdams and restore baffles, Bonneville Dam, Multnomah Co., CIVENG-35-026-54-148, OREGON. U. S. Eng., Pittock Block, Portland, Ore. Bids June 10, awarded June 23. CD 6/16, under LB.

United Pacific Constr. Co., Eugene, Ore., LB, $48,833. constr. 8,055 lin. ft. 6- to 12-in. water line, UMATILLA, ORE. City, City Hall, Umatilla, Ore. Bids June 21. CD 6/3.

† WASHINGTON—Bureau P. Rds., Dpt. Commerce, Morgan Bldg., Portland, Ore.

G. T. Walker, Myrtle Creek, Ore., LB, $155,626, grading 4.341 mi. Muddy-Fork Butter Creek Rd., Proj. 146-A, Lewis Co. Bids June 22. CD 6/15.

▲ WASHINGTON—State Hy. Comn., Olympia,

J. D. Shotwell Co., 3113 S. Pine St., Tacoma, Wash., LB, $139,923, b. conc. 7.348 mi. State Hys. 2, 5, 5-A, 5-B and 5-M, Lake City vicinity, King Co.;

Columbia Asphalt Paving Co., Yakima, Wash., LB, $139,361, 0.693 mi. Primary State Hy. No. 3, Yakima Co.;

Northwest Constr. Co., 3950 6 Ave. N. W., Seattle, Wash. LB, $339,338, 2.383 mi. Primary State Hy. No. 1, Snohomish Co.;

L. D. Shilling, Moses Lake, Wash., LB, $418,172, 15.244 mi. State Hy. No. 18, F.A.P. F 045-2 (1) Unit 1, Adams and Grant Counties. Bids June 22. CD 6/9.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ Henry M. Mason Co., 2206 N. W. Thurman St., Portland, Ore., CA, $1,000,000. constr. 27 shops in SHOPPING CENTER, CEDAR HILLS, ORE. Commonwealth, Inc., Equitable Bldg., Portland, Ore. Belluschi & Skidmore, Owings & Merrill, 2040 S. W. Jefferson St., Portland, Ore., archts. Awarded June 22.

C. M. Corkum Co., 2630 S. W. 2nd St., Portland, Ore., LB, $841,897. general constr.;

A. G. Rushlight Co., 3900 N. W. St., Helens Rd., Portland, Ore., LB, $191,982, mechanical work for WAREHOUSE, MILWAUKIE, ORE. Oregon Liquor Control Comn., 2505 S. E. 11 St., Portland, Ore. Bids June 22. CD 5/18.

▲ Clifford Orth Constr. Co., 1829 N. E. Broadway, Portland, Ore., Force Account. $7,500,000. 450 to 475 DWELLINGS, 121-acre tract, east of PORTLAND, (city limits), ORE. Thielson & Thompson, Davis Bldg., Portland, Ore. archts. Awarded June 22.

▲ George A. Fuller Co., 3100 W. 8 St., Los Angeles 5, Calif., CA, $2,830,000, general contract;

Collins Electrical Co., Sacramento, Calif., CA, $583,583, electrical work;

Westinghouse Electric Corp., 150 Pacific Ave., Jersey City, N. J., CA, $533,000, elevators and escalators;

M. R. Carpenter, 907 Front St., Sacramento, Calif. CA, $1,113,736, heating, ventilating, air conditioning and refrigeration work for 6 story OFFICE bldg., for the Dpt. Employment, SACRAMENTO, CALIF. State Dpt. P. Wks., Div. Architecture, Sacramento, Calif. Grand total $5,059,959. Bids June 22, awarded June 25. CD 5/19.

CANADA

BIDS ASKED—HEAVY CONSTRUCTION

▲ Alta., Namao—BARRACK BLOCK—BA 7/22—Defence Constr. Ltd., 56 Lyon St., Ottawa, Ont., barrack block, 2 officers quarters, officers' mess, H. O. Bldg. and drill hall, R.C.A.F. Station, $1,300,000. Plans deposit $100. CD 4/16/53.

BIDS ASKED—BUILDINGS

Ont., Kingston—INSTITUTE—BA 7/14—Bd. Educ., 320 Johnson St., 5 wings, one and 2 story rein.-con., steel, brick, Queen Elizabeth Collegiate and Vocational Institute, $750,000. Drever & Smith, 81 Brook St., archts. CD 11/12.

Ont., Orrillia—OFFICE—BA 8/4—Dpt. P. Wks., Hunter Bldg., Ottawa, office bldg. $350,000. Plans deposit $200. W. M. Harvey, 36 E. Adelaide St., Toronto, archt. CD 4/21.

SOON LETS CONTRACT—BUILDING

Que., Chicoutimi — DEPOT — Canadian Petrofina Ltd., 1015 Beaver Hall Hill, Montreal, soon lets contract, storage depot at Harbour. $200,000.

HEAVY CONSTRUCTION

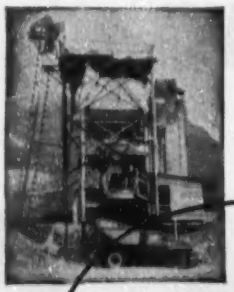
LOW BIDS AND CONTRACTS

▲ Poole Constr. Co. Ltd., 10503 109 St., Edmonton, Alta., CA, $1,036,245, control towers, operations bldg. and passageway, Cold Lake R.C.A.F. Station, COLD LAKE, ALTA. Defence Constr. (1951) Ltd., 56 Lyon St., Ottawa, Ont. Awarded May 31.

(Continued on page 112)

"THAT'S REALLY THE WAY TO HANDLE CONCRETE"

says L. G. (Bud) Waigand, Project Manager, Peter Kiewit Sons Co.



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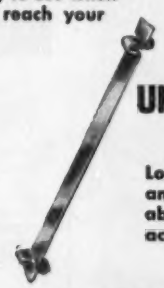

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Locks, spreads and ties . . . absolutely accurate.

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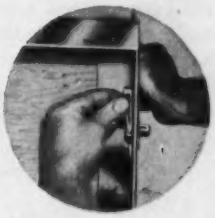

2 Set the Tie Key into the Tie Loop. Panel and Tie are then locked into one integral unit.

3 Bring the next UNI-FORM Panel into position . . . insert the Tie Key. The assembly is now completed.

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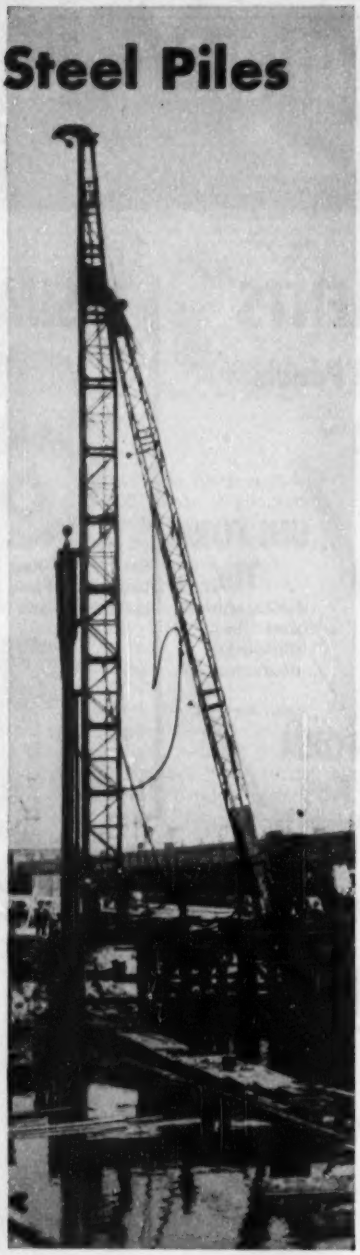

The 11B3 Double-Acting Pile Hammer, used in this project, is one of the McKiernan-Terry 16 sizes of double-acting and single-acting hammers and 2 sizes of double-acting extractors.

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Dept. E, Scranton 2, Penna.

(Continued from page 110)

Poole Constr. Co. Ltd., 2402 2 A St., Calgary, Alta., CA, **$450,000**, School, R.C.A.F. Station, COLD LAKE, ALTA. Govt of Canada, Central Mortgage & Housing Corp., 400 Kensington Bldg., Winnipeg, Man.

Poole Constr. Co. Ltd., 10503 109 St., Edmonton, Alta., CA, **$112,693**, bath house and swimming pool in Mill Creek, EDMONTON, ALTA. Municipality, Civic Block, Edmonton, Alta. CD 2/25.

Henry Modland & Son, Alexandria, Minn., U. S. A., CA, **$370,000** water system, BOISSEVAIN, MAN. Municipality, Boissevain, Man. CD 6/16.

Municipality, City Hall, Flin Flon, Man., Own Forces, **$96,500**, water supply mains, FLIN FLON, MAN. Bids May 29. R. F. Comstock, Town Hall, Flin Flon, Man., town engr.

R. Beitz & Sons Ltd., 586 Redmond Ave., Winnipeg, Man., CA, **$49,502**, water mains, SELKIRK, MAN. Municipality City Hall, Selkirk, Man. J. Peterson, Town Hall, Selkirk, Man., town engr.

Nelson River Constr. Co. Ltd., 101 Dawson Rd., St. Boniface, Man., LB, **$98,762**, trunk sewers, WINNIPEG, MAN. Municipality, City Hall, Winnipeg, Man. W. D. Hurst, City Hall, city engr.

Dominion Bridge Co. Ltd., Canada Cement Bldg., Winnipeg, Man., CA, **$87,820**, north approach superstructure of Midtown Brjdge, WINNIPEG, MAN. City, City Hall, Winnipeg, Man. Bids June 15, awarded June 22. CD 5/24.

▲† **Byers Constr. Co. Ltd.**, 5675 Western Ave., Montreal, Que., CA **$1,400,000**, buildings and facilities at U. S. leased air base, Pepperell Air Force Base, ST. JOHNS, NEWFOUNDLAND. U. S. Eng., Atlantic Dist., 346 Broadway, New York 13, N. Y. O'Connor & Killam, 101 Park Ave., New York, N. Y., and Eggers & Higgins, 100 E. 42 St., New York, N. Y., archts. Praeger & Maguire, 126 E. 38 St., New York, N. Y., engrs. Bids June 10, awarded June 15. CD 4/28.

Cameron Contg. Ltd., 77 Upper Wate St., Halifax, N. S. LB, **$78,459**, breakwater repairs and replacement PARKER'S COVE, N. S. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. Bids June 21. CD 6/8.

ONTARIO—Ontario Dpt. Hys., Parliament Bldgs., Toronto,

Sir Robert McAlpine & Sons (Canada) Ltd., 38 King St. W., Toronto, Ont., LB, **$68,200**. resurf. 7.3 mi. Hy. 16, Manotick, to North Gower, Ottawa. Bids June 15. CD 6/4.

Dunker Constr. Co. Ltd., 178 Louisa St., Kitchener, Ont., CA, **$50,000**, pumphouse and reservoir, ELMIRA, ONT. Municipality, City Hall, Elmira, Ont. CD 8/5.

Hacquoil's 228 W. Gore St., Fort Williams, Ont., CA, **$400,000** resurf. all concrete runways at Fort William Airport, extending east runway 550 ft. FORT WILLIAM, ONT. Dpt. Transport, Hunter Bldg., Ottawa, Ont. Awarded June 22.

St. Lawrence Contg. Co., Ltd., 21 Wallbridge Rd., Belleville, Ont., CA, **$156,531**, 2 chapels, R.C.A.F. Station, PICTON, ONT. Defence Constr. Ltd., 56 Lyon St., Ottawa, Ont. Bids May 27. CD 5/12.

Ontario Constr. Co. Ltd., Box 36, St. Catherines, Ont., CA, **$445,000** WW filtration plant exten., ST. CATHERINES, ONT. St. Catherines Waterworks Comn., St. Catherines, Ont. Bids May 31. CD 4/27.

Fielding Constr. Ltd., 140 Douglas St., Sudbury, Ont., CA, **$35,974**, 2,575 lin. ft. 8 in. c.i. water mains and 2,595 lin. ft. 6 in. water mains, SUDBURY, ONT. McKim Twp., 11 Elm St. E., Sudbury, Ont. T. J. Carbonne, 269 Willow St., Sudbury, Ont., engr.

Pioneer Constr. Co. Ltd., 94 Cedar St., Sudbury, Ont. CA, **$225,000**, pavements and resurf. various streets, SUDBURY, ONT. City, 83 Cedar St., Sudbury, Ont. Awarded June 22. CD 3/17.

Miller Paving Ltd., 56 Blake St., Toronto, Ont., CA, **$500,000**, all roads in Phase 2 of the satellite community development area, TORONTO, ONT. Don Mills Development Ltd., Donalda House, York Mills, Ont. King Coons Ltd., 154 Bloor St. W., Toronto, Ont., engr. CD 3/18/53, under Commercial Buildings.

Carter Paving Co. Ltd., 419 Cherry St., Toronto, Ont., CA, **$850,000**, airport runways, taxistrips and parking apron extensions and rehabilitation at Windsor Airport, WINDSOR, ONT. Dpt. Transport, Hunter Bldg., Ottawa, Ont. Bids May 17, awarded June 21. CD 5/10.

Montpelier Constr. Ltd., 4800 Iberville St., Montreal, Que., CA **$120,849**, pavement and sidewalks on various streets;

Miron Constr. Ltd., 2201 St. Michel Rd., Montreal, Que., CA, **$272,760** pavement and sidewalks, Henri-Bourassa Blvd., MONTREAL, QUE. Municipality, City Hall, Montreal, Que. L. L'Allier, City Hall, Montreal, Que., city engr.

R. B. MacLeod & Co. Ltd., 57 York Bldg., Saskatoon, Sask., LB, **$196,000**, sewerage sys., CANORA, SASK. Municipality, Canora, Sask.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Christensen & Macdonald Ltd.**, Tegler Bldg., Edmonton, Alta., LB, **$6,269,269**, 10 story, 130x282 ft. concrete, steel, brick, stone PUBLIC BLDG., 107 St. and 98 Ave., EDMONTON, ALTA. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. Bids June 16. CD 6/2.

▲ **Fluor Corp. of Canada Ltd.**, 6010 Notre Dame St. E., Montreal, Que., CA, **$3,000,000**. REFINERY addn. incl. crude unit, viscosity-breaker and ethyl blending plant, WAINWRIGHT, ALTA. Wainwright Producers & Refiners Ltd., Wainwright, Alta. H. C. Acres & Co. Ltd., Niagara Falls, Ont., engr.

A. R. Grimwood Ltd., 1129 Kingsway, Vancouver, B. C. CA, **$368,565**, Junior High SCHOOL, VANCOUVER, B. C. University Hill School Bd., Vancouver, B. C. CD 1/15/47.

Cameron Contg. Ltd., 77 Upper Water St., Halifax, N. S. CA, $273,000, LABORATORY exten., Royal Canadian Navy Base, DARTMOUTH, N. S. Defence Constr. (1951) Ltd., 56 Lyon St., Ottawa, Ont. Bids May 27, awarded May 31. CD 5/11.

▲ **Pigott Constr. Co. Ltd.**, Pigott Bldg., Hamilton, Ont. CA, $2,000,000, 6 story, 76x185 ft., steel, brick, stone BANK and OFFICE, 28 James St. S., HAMILTON, ONT. Royal Bank of Canada, 360 St. James St. W., Montreal, Que. Norman Wagner, 42 James St., North Hamilton, Ont. engr. E. P. Warren, c/o owner, ch. archt. Bids June 21, awarded June 24. CD 6/8.

▲ **Redfern Constr. Ltd.**, 36 Toronto St., Toronto, Ont., CA, $5,000,000, RESIDENTIAL DEVELOPMENT, Queen Elizabeth Highway, OAKVILLE, ONT. Falgarwood Holdings, Ltd., Oakville, Ont.

Green & Scrivens Co. Ltd., 270 Maclaren St., Ottawa, Ont. Owner Builds, $378,000, nine 54 unit APARTMENTS, in Sherbourne, Byron and Ninth Ave. area, OTTAWA, ONT.

Milne & Nicholls Ltd., 57 Bloor St. W., Toronto, Ont., CA, $958,000. 6 story, bsmnt. irregular shaped 72-suite brick, concrete Renent Park HOUSING DEVELOPMENT, Buildings 21 and 23, TORONTO, ONT. Housing Auth. of City of Toronto, City Hall, Toronto, Ont. Bids May 21, awarded June 21. CD 6/2, under LB.

▲ **Peter Issenman** c/o B-A Shulman, archt., 1421 MacKay St., Montreal, Que. Owner Builds, $1,000,000. 104 concrete, brick BUNGALOWS, Westminster Ave. MONTREAL WEST, QUE.

ALASKA

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Mannix International Corp.**, 174 Lombard Ave., Winnipeg, Man. LB, $1,731,414, relaying rails 58.7 mi. railroad between Seward and Portage, ALASKA. The Alaska R. R., Dpt. Interior, Anchorage, Alaska. Bids June 22. CD 6/7.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Schmid Constr. Co.**, 3010 1st Ave., Seattle, Wash. CA $829,600, 1 story, 38,500 sq. ft. Aurora frame Elementary SCHOOL; CA $432,100, Ursa Minor Grade School, Elmendorf Air Force Base, ALASKA. U. S. Housing & Home Finance Agency, New World Life Bldg., Seattle 4, Wash. Bids June 17. CD 6/23 under LB.

AMERICANS ABROAD

BIDS ASKED—HEAVY CONSTRUCTION

Iraq—BA 7/15—The Development Bd. of the Govt. of Iraq, Baghdad, constr. Diversion Tunnel and subsidiary works for Derbend-i-Khan Proj. on Diyala Sirwan River approx. 35 kilometers southwest of Halabja and same 300 kilometers northeast of Baghdad, open excavation (common and rock). Plans deposit I. D. 10,000. Harza Eng. Co., 400 W. Madison St., Chicago, Ill., U. S. A., consult. engrs.

Proposed Projects——

WATER SUPPLY

▲ **Calif., Pomona**—City, Cty Hall, $3,700,000 bond election July 20, water system imprvs. CD 3/28/51.

Mo., St. Louis County—Public Water Supply Dist. No. 3, St. Louis County, May H. Goltermann, clk., 4348 Ringer Rd., Mehlville, Zone 23, $195,000 bond election July 13, imprvs., extens. to WW sys. of district.

O., Bucyrus—City, Frank P. Sitler, mayor, reservoir east of present 2 reservoirs, with storage capacity of 150 million gals. $200,000-$250,000.

O., Eastlake—City of Eastlake, 36730 Lake Shore Blvd., c/o Cleveland, bond election Nov. 2, 16 in. water main in Lakeland Blvd. $200,000. Morris E. Nail & Assocs., 401 Prospect Ave., Cleveland, Zone 14, consult. engrs. CD 6/3.

O., Waterville—Bd. P. Affairs, Waterville, water imprvs., 100,000 gal. water tower, $53,600; expans. treatment plant to 300,000 gals. a day instead of 200,000 gal. $41,700; general repairs to treatment plant, $30,000. Finkbeiner, Pettis & Strout, 518 Jefferson St., Toledo, consult. engrs.

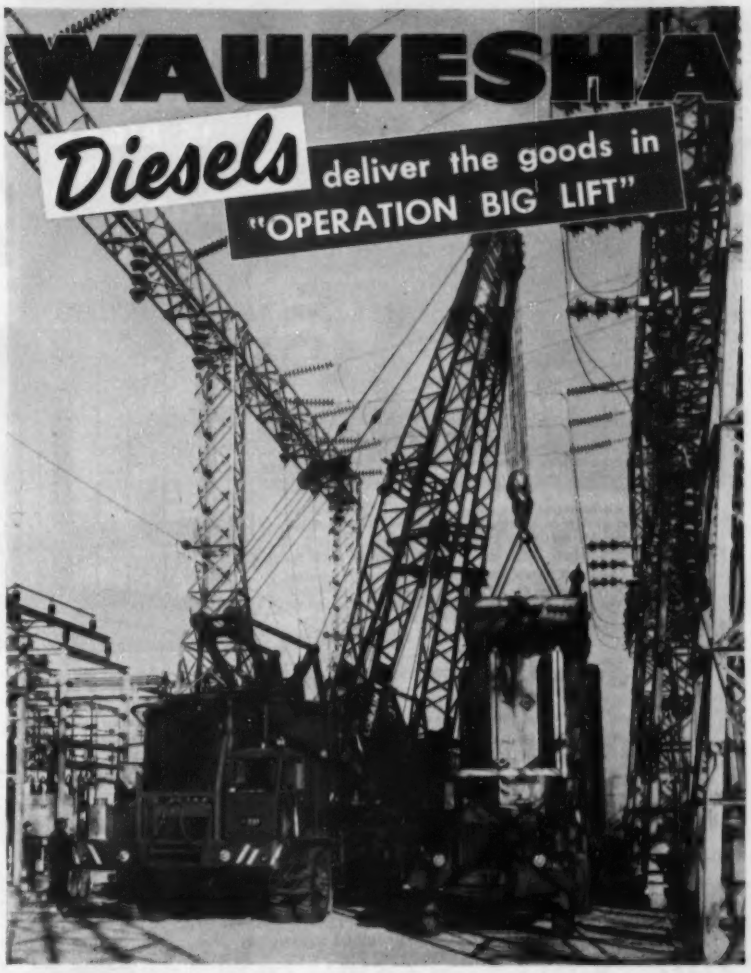
O., Westerville—Village, Ralph Snyder, mgr., upground water storage reservoir, $185,918.

Okla., Midwest City—City, bond election July 20, two water wells and equipment, $112,000. J. M. Plank, 1323 N. Robinson St., Oklahoma City, consult. engr. CD 9/25.

Tex., Richardson—City, W. A. Walwood, mayor, WW sys. rehabilitation, $75,000;c.I water lines, $95,000; elevated or ground water storage, $60,000. Forrest & Cotton, Praetorian Bldg., Dallas, consult. engrs.

Utah, Ogden—Ogden City Council, E. J. Allison, City-County Bldg., Ogden, voted bonds, water treatment plant. $900,000. Templeton & Linke, Dooly Bldg., Salt Lake City, consult. engrs. CD 3/25.

Que., Sept Isles—Town, J. A. Boissinot, secy., watermains, $100,000.



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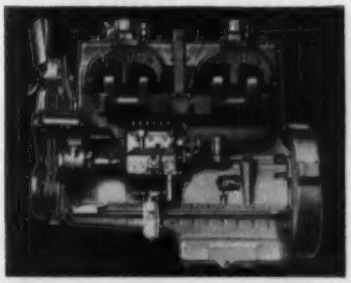
These two 45-ton MC-824 Lorain Moto-Cranes, owned by the City of Los Angeles, Dept. of Water & Power, moved three 62-ton AC transformers to a new sub-station near the Northrop Aviation Plant. These giant transformers were removed from cramped locations and placed in the midst of crowded high voltage equipment... an operation requiring precision power and perfect co-ordination between the two rigs, each equipped with a 50-foot boom.

The power that handled this job so smoothly, and without a hitch, was furnished by Waukesha Model WAKD Diesel engines, powering both the turntables and the carriers. For detailed information on the many advanced design and construction features of this Waukesha Diesel, send for Bulletin 1415.



6-WAKD WAUKESHA Super Duty Diesel. 6-cyl. 6¼-in. bore x 6½-in. stroke, 1197 cubic inch displacement.

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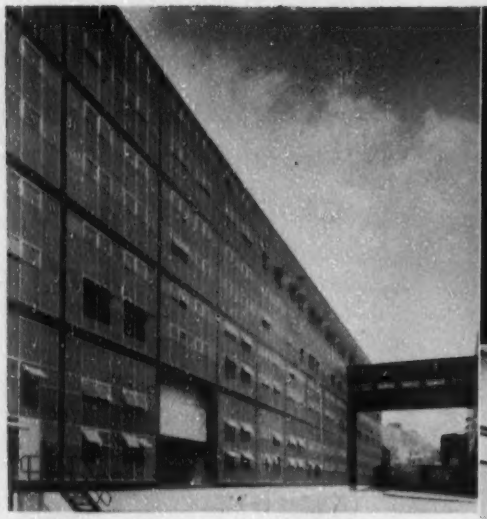

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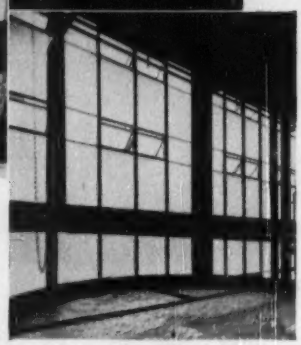

Coolite, Heat Absorbing and Glare Reducing Glass combines beauty and utility in an exciting new variety of industrial architecture for H. J. Heinz Co. Ezra Stoller Photos.

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Skidmore, Owings, & Merrill, Architects and Engineers; Gordon Bunshaft, Partner in Charge. Jaros, Baum & Bolles, Mechanical Engineers. George A. Fuller, General Contractor and Lloyd B. Knutsen, Project Manager for the H. J. Heinz Company.

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The striking exterior of the new, Heinz vinegar plant, Pittsburgh, Pa., executed in a shimmering sweep of Coolite, Heat Absorbing and Glare Reducing glass, has already been acclaimed "a brilliantly incisive piece of architecture." The beauty and drama of this modern concept is immediately apparent . . . fit perfectly the Heinz tradition of highest quality materials and workmanship. The advantages of Coolite to plant interior are as important as exterior beauty . . . employes work comfortably in areas completely daylightedwith Coolite-conditioned light . . . light without harmful glare or excessive solar heat.

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SEWERS, WASTE DISPOSAL

Calif., Torrance—City, City Hall, sanitary sewers in Falda Ave. $100,000.

Del., Smyrna—Town, sewage disposal plant. $200,000. Whitman, Requardt & Assocs., 1304 St. Paul St., Baltimore, Md., consult. engrs. CD 12/16.

O., Eastlake—City of Eastlake, 36730 Lake Shore Blvd., c/o Cleveland, bond election Nov. 2, sanitary sewer trunk lines, $850,000. Morris E. Nall & Assocs., 401 Prospect Ave., Cleveland, Zone 14, consult. engrs.

▲ **O., Toledo**—Comrs. Lucas Co., Court House, storm sewerage sys., incl. 2 mi. main trunk sewer from Portsmouth Ave., along Maxwell Rd. to Monroe St., through Ottawa Park, to Ten Mile Creek for Northwest Toledo, incl. 3,600 ft. 96 in. rein.-con. pipe; 1,550 ft. 108 in. pipe; 5,250 ft. 120 in. main to outfall at creek, incl. 6 mi. lateral drainage mains from 30 to 72 in. size to serve 2,400 acres, $3,300,000, Guy Neeper, co. engr. Raymond Hall, co. sanitary engr. CD 4/9/52.

Okla., Midwest City—City, bond election July 20, sewage disposal plant, $673,000. J. M. Plank, 1323 N. Robinson St., Oklahoma City, consult. engr. CD 9/25.

Pa., Hulmeville, Langhorne Manor, Langhorne and Penndel—Sewerage Auth. of Hulmeville, Langhorne, Langhorne Manor and Penndel, c/o Glace & Glace, engrs., 1001 N. Front St., Harrisburg, sewerage sys. $250,000.

† **Pa., Phila.**—Dpt. Navy, Phila. Naval Base, Phila., sewage disposal sys., Fort Mifflin Naval Ammunition Depot. $360,000. Albright & Friel, Inc., 121 S. Broad St., consult. engr.

Tex., Baytown—D. L. Huson & Edwin Brown, Almeda-Genoa Rd., Houston, sanitary sewer collection lines, $65,000; storm sewers, $61,000, just outside city limits.

Tex., Corpus Christi—Nueces Investment Corp., Jones Bldg., storm sewers, $65,000; sanitary sewers, $65,000, 167-acre tract.

Tex., Dallas—Wilson Brown, Ralph D. Daniels & Assocs., 2711 Inwood St., sanitary sewer collection lines, $70,000 storm sewers, $68,000. Chic McElya Engineers, 3901 San Jacinto St., consult. engrs.

Tex., Dallas—Centex Constr. Co., c/o Tom Lively, pres., 4911 Greenville St., Section 1, sanitary sewer collection lines, $66,150; storm sewers, $64,000 in extension of Country Club Park Addn.

Tex., Houston—Aid Utility Co., c/o Greenwood Addn., sanitary sewer lines, $65,000; storm sewers, $60,000, in Fourth Zone of Greenwood Village, off Hardy Rd.

Tex., Houston—Built-Right Homes, c/o F. B. & B. F. Schoeneman, 415 S. Haskell St., Dallas and 8841 Chocolate Bayou Rd., sanitary sewer collection lines, $65,000; storm sewers, $60,000, 160-acre tract, off 8800 blk. Chocolate Bayou Rd. Blue Ridge Development Co., 8841 Chocolate Bayou Rd., consult. engr.

Tex., Houston—Centex Constr. Co., 4911 Greenville St., storm sewers, $65,000; sanitary sewers, $67,500, off Freeway in area Pasadena tunnel, near here.

Tex., Houston—Huntleigh Corp., 11527 Memorial Dr., sanitary sewers, $65,000; storm ssewers, $65,000, tract 2½ mi. west of Post Oak Rd. Robert M. Atkinson, 1st Natl. Bank Bldg., consult. engr.

Tex., Houston—A. Mascari, Builder, 2130 Chantilly St., sanitary sewer collection lines, $62,500; storm sewers, $60,000. northwest sect. of city, north of Oak Forest.

Tex., Richardson—City, W. A. Walvoord, mayor, sanitary sewerage sys. rehabilitation, $70,000; sanitary sewer collection lines, $125,000; sewage disposal unit, $85,000. Forrest & Cotton, Praetorian Bldg., Dallas, consult. engrs.

Tex., San Antonio—W. H. Barnes Real Estate Co., 1418 W. Hildebrand Ave., storm sewers, $60,000; sanitary sewers, $60,000, Sect. 4 of Hollywood Park off Hy. 281 and 5 mi. north of Military Hy.

Tex., San Antonio—Bellaire Lumber Co., Inc., 7903 S. Flores St., sanitary sewer collection lines, $65,000; storm sewers, $60,000 in new exten. of Bellaire subdivision.

Tex., San Marcos—City, storm sewer main $60,000; sanitary sewer main, $65,000, to property of Cone Mills.

Tex., San Marcos—Cone Mills, Inc., Greensboro, sanitary sewerage sys. $60,000; storm sewers, open drainage, $65,000. Lockwood Greene Engineers, Inc., Montgomery Bldg., Spartanburg, N. C., and Frank T. Drought, 342 W. Woodlawn St., San Antonio, consult. engrs. Dan McConnell, c/o owner, ch. engr. CD 6/9.

Que., Sept Isles—Town, J. A. Boissinot, secy., sewers, $150,000.

BRIDGES

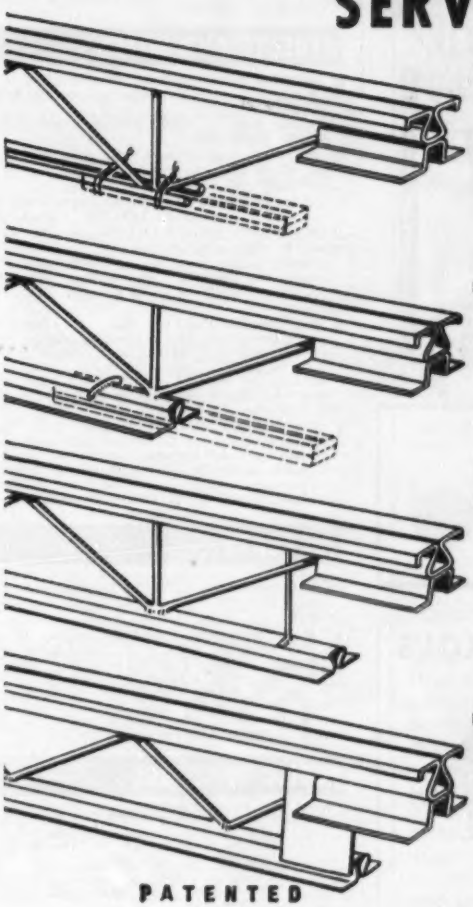
▲ **Ill., Chicago**—City, City Hall, viaduct-grade separation, Archer Ave. over Western Ave. and Western Blvd., $600,000; viaduct-grade separation Ashland Ave. over Blue Island Ave. and Cermak Rd., $900,000; viaduct on Archer Ave. and grade separation on Archer Ave. $300,000; viaduct-grade separation, Archer Ave. over Cicero Ave. $350,000. CD 3/19/45.

▲ **MISSOURI**—Missouri State Hy. Dpt., Harris D. Rodgers, chn., Jefferson City,

St. Louis and St. Charles Counties—4-lane steel, concrete toll-free bridge to carry U.S. No. 40 over Missouri River between St. Charles and St. Louis

(Continued on page 116)

HOW MACOMBER *Nailable* STEEL JOISTS SERVE architects, engineers, contractors



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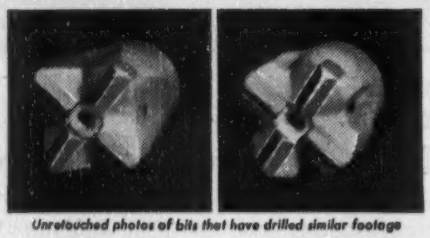

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(Continued from page 114)

Counties, 1 mi. upstream from present bridge at St. Charles, $13,320,000. Cost incl. $8,500,000 for bridge proper. $2,970,000 for St. Louis Co. approaches and $1,850,000 for St. Charles Co. approaches. CD 12/11/53, under Mo., St. Louis County.

O., Cleveland—Cleveland Metropolitan Park Bd., Standard Bldg., Zone 14, 318 ft. span steel or rein.-con. bridge 36-ft. roadway over Rocky River in Metropolitan Park, $200,000. H. W. Groth, c/o owner, ch. engr.

▲ B. C., New Westminster—City, double-bascule bridge, Lulu Island to be alongside present structure and to accommodate rail traffic. $1,500,000. Phillips & Barrott, 1701 W. Broadway, Vancouver, consult. engrs.

Que., Yamachiche—Municipality, bridge over River Yamachiche, $100,000.

STREETS AND ROADS

▲ ARIZONA—State Hy. Comn., Phoenix, plans, Route 60—north-southwest feeder into central Arizona, $3,318,000;
Route 66—main east-west highway across northern Arizona, $3,888,000.
Route 80—southeast-northwest main road, $7,272,000.
Route 89—north-south road linking with Route 80, $2,006,000. CD 6/12/52.

Calif., San Diego—City, Civic Center, imprv. Grand Ave., Cass Ave. to Ingraham St. $109,202. Alden K. Fogg, c/o owner, city engr. CD 11/6/44.

Minn., St. Paul—City, J. Okoneski, clk., resurf. with b. conc. present street car tracks on parts of W. Seventh St., Robert St., Snelling Ave., East Seventh St. and Marshall Ave. $282,827, G. M. Shepard, city engr. CD 11/9.

▲ Tex., Houston—City, City Hall, 900 Brazos St., bond election July 24, blacktopping streets, Northside (of Main St.), $3,000,000; Southside of (Main St.), $3,000,000; permanent type street paving, Northside (of Main St.), $2,500,000; Southside (of Main St.), $2,500,000. Frank Baldwin, Dir. P. Wks., utilities engr. CD 8/28/52.

▲ Wash., Seattle—City, County-City Bldg., paving streets, sidewalks on W. Thistle and other streets between 28 Ave. southwest and Puget Sound, W. Holden to Barton Sts. $1,062,000. paving streets and replace water mains in University and Windermere Dists. $139,588. W. E. Parker, city engr.

AIRPORTS

Calif., Redwood City—AIRPORT—San Mateo Co., Court House, $750,000 bond election Nov. 2, 300-acre for airport. CD 12/11/44.

▲† N. J., Wrightstown—BEACON, etc.,—U. S. Eng., 121 N. Broad St., Phila. 1, Pa., radio homer beacon, $100,000; automotive shops and motor pool area, $500,000, Porter Urquhart & Beavin, 415 Frelinghuysen Ave., Newark, consult. engrs, processing center, $500,000, McCormick, Lewis & Kopf Assocs., 1321 Arch St., Phila., Pa., consult. engrs., all above work at McGuire Air Force Base. CD 5/9/52.

PUBLIC BUILDINGS

Calif., Alameda—SCHOOL—Alameda City Unified School Dist., 1315 Oak St., plans by Kent & Haas, 525 Market St., San Francisco, Wm. G. Paden Elementary School $550,000. CD 1/23/53.

▲ Calif., Anaheim—SCHOOLS—Anaheim Elementary School Dist., Anaheim, voted $1,600,000 bonds June 16 schools. CD 4/27.

Calif., Placerville—SCHOOLS—El Dorado Co., High School Dist., Placerville, defeated $950,000 bonds, high schools. CD 4/29.

Calif., Reedley—SCHOOLS—Reedley Joint Union High School Distr., Reedley, voted $900,000 bonds, school addns. CD 5/20.

▲ Calif., Temple City—SCHOOL—Temple City Unified School Dist., 9516 Longden Ave., voted $1,900,000 bonds, high school, Temple City Blvd. and Lemon Ave. CD 4/27.

▲ Conn., New Haven—SCHOOL—City, Bd. Educ., 169 Church St., Junior High School. $1,000,000. CD 10/18/48.

▲ Fla., Gainesville—MEDICAL SCHOOL—State Bd. Control, Education Bldg., Florida State University, Tallahassee, plans by Ellerbe & Co., 505 First Natl. Bank Bldg., St. Paul 1, Minn., second unit Medical school University of Florida, $7,000,000. CD 6/16/53.

Ill., Chicago—DENTAL MEDICAL—University of Illinois, 1716 W. Taylor St., plans by Pace Associates, 53 W. Jackson Blvd., Zone 4, rehabilitate dental-medical bldg. 1853 W. Polk St. $500,000. CD 3/18/53.

Ill., North Riverside—SCHOOL—School District 94, 8940 W. 24 St., plans by Bryant & Walchi, 176 W. Adams St., Chicago, Zone 3, elementary school. $350,000.

Ia., Glenwood—COURTHOUSE—Mills Co., defeated $365,000 bonds, court house, CD 5/26.

Ky., Louisville—SCHOOL—Jefferson Co. Bd. Educ., 618 W. Jefferson St., plans by Hartstein, Louis & Henry, McDowell Bldg., elementary school, Bardstown Rd. and Wingfield Lane, Fern Creek, $498,491.

Ky., Lyndon—HOME—State, State Office Bldg., Frankfort, plans by W. S. Arrasmith & Wm. Tyler, Madrid

Bldg., Louisville, children's receiving center, Kentucky Children's Home, $350,000.

Mass., Sterling—SCHOOL—Town, Main St., plans by Perley F. Gilbert & Assoc., Inc., 53 Central St., Lowell, elementary school, $400,000.

▲ Mich., Birmingham—SCHOOL—City, Irene E. Hanley, clk., voted $3,500,000 bonds June 14, high school addn., Junior High School. CD 5/19.

Mich., Center Line — SCHOOL — City, voted $600,000 bonds June 14, school.

▲ Mich., Grosse Pointe—SCHOOL—Bd. Educ., Consolidated School Dist., voted $1,225,000 bonds June 14, elementary school, 2 school addns. Earl G. Meyer, 806 Farwell Bldg., Detroit, archt.

Mich., Redford—SCHOOL—Redford Twp., Redford Union Dist., voted $900,000 bonds June 14, school expansion.

▲ Mich., Romulus—SCHOOL—Romulus Twp. Bd. Educ., voted $1,300,000 bonds June 14, high school.

▲ Mich., Wyandotte—SCHOOL—City, Bd. Educ., voted $7,250,000 bonds June 14, schools. CD 5/27.

▲ Minn., Hibbing—SCHOOL—Bd. Educ., E. G. Hoskins, clk., plans by Jyring & Jurenes, Hibbing, and Haarstick, Lundgren & Assoc., W. 1391 First National Bank Bldg., St. Paul, junior high school. $1,000,000.

Minn., Montevideo—COURT HOUSE—Chippewa Co., N. G. Miller, aud., voted $600,000 bonds June 15, 3 story court house, $550,000. Thorshov & Cerny, 400 Metropolitan Bldg., Minneapolis, archts. CD 11/4.

Minn., Owatonna—SCHOOL—Bd. Educ., Mrs. Vera Hinderman, clk., plans by Ellerbe & Co., E. 505 First National Bank Bldg., St. Paul, school. $500,000.

Minn., Waconia—SCHOOL—Bd. Educ., T. Wagener, clk., voted $325,000 bonds June 18, school addn., $300,000. H. H. Swanson, 500 Sexton Bldg., Minneapolis, archt. CD 6/16.

Mo., Blue Springs—SCHOOL—Bd. Educ., Blue Springs, plans by Shaughnessy & Bower, Congress Bldg., Kansas City, Mo., high school, $400,000.

Neb., Lincoln—ADMINISTRATION ANNEX—University of Nebraska 12 and R Sts., plans by Hazen & Robinson, 305 Stuart Bldg., administration annex. $600,000.

N. J., Bordentown—SCHOOL—Bordentown Bd. of Educ., Bordentown, plans by Micklewright & Mountford, 72 Ewing St., Trenton, elementary school, Crosswicks St., $800,000.

▲ O., Dayton—COURT HOUSE—Comrs. Montgomery Co., Court House, $2,000,000 bond election Nov. 2, court house and juvenile center. $5,500,000. CD 11/11/52.

▲ O., Dayton—HIGH SCHOOL—Bd. Educ., Mad River School Dist., Harshman Rd., high school, Harshman Rd. and Valley Pike, 26-acre tract. $2,500,000.

O., Fredericktown—SCHOOL—Bd. Educ., Fredericktown, bond election November 2, grade school. $375,000.

▲ Pa., Butler—SCHOOLS—School Dist. of Butler, 425 N. Washington St., plans by W. G. Eckles Co., Lawrence Saving & Trust Bldg., New Castle, 1 and 2 story, brick, block, L-shaped grade school, Penn and Washington Sts., $704,000; 1 and 2 story, brick, block grade school, Center Ave., $340,000.

▲ Pa., Chester—SCHOOLS—Chester School Dist., Larkin Bldg., plans by J. M. Blew & Son, 326 W. State St., Media, Highland Gardens School. $750,000; School, 17 and Melrose Sts., $500,000. CD 3/12/53.

Pa., Larchmont—HIGH SCHOOL—Marple-Newtown Joint High School Bd., Larchmont, plans by Joseph J. Wigmore, 117 S. 17 St., Phila., Marple Newtown Joint Junior and Senior High School addn. $833,000. CD 6/18.

Pa., Montgomeryville—SCHOOL—Montgomery Twp. School Bd., Montgomeryville, plans by Eastern Eng. Co., 836 Elm St., Reading, school (new or addn.). $300,000.

Pa., Morrisville—SCHOOL—Morrisville Bd. Educ., Morrisville, plans by J. M. Blew & Son, Media, elementary school, Prospect Ave. $750,000. CD 2/1/52.

▲ Pa., Phila.—HIGH SCHOOL—Bd. Educ., 21 and Winter Sts. Benjamin Franklin High School. $3,250,000.

Pa., Sharpsville—SCHOOL—School Dist. of Sharpsville, Sharpsville, plans by Hunter, Helgesy, Gross, 1270 E. State St., Sharon, 1 story, brick, steel grade school. $350,000.

▲ Tex., Aldine—SCHOOLS—Aldine Independent School Dist., Aldine, plans by C. H. Kiefner & Eugene Werlin, 3501 Buffalo Dr., Houston, high school, $1,500,000; elementary school, $300,000; elementary school expans, $300,000. CD 5/11; elementary-junior school expansion, $300,000.

Tex., Donna—SCHOOL—Donna Independent School Dist., Donna, plans by R. Newell Waters, 1st. Natl. Bank Bldg., Weslaco, school. $450,000. CD 6/16.

Tex., Galveston—WAREHOUSE—Galveston Wharves, at Waterfront, Galveston warehouse, $500,000.

N. B., Campbellton—HOSPITAL EXTENSION—Dpt. P. Wks., Parliament Bldgs., Fredericton, plans by Ross, Patterson, Townsend & Fish, 1010 St. Catherine St., Montreal, Que., and Douglas Johnson, c/o owner, provincial mental hospital exten., near here, $800,000. CD 3/25/48.

▲ Ont., Ottawa—HOSPITAL—Dpt. P. Wks., Hunter Bldg., plans by A. E. Gardner, c/o owner, 35-bed tri-service hospital, $4,000,000. CD 7/21/52.

▲ Ont., Toronto—HIGH SCHOOL—Bd. of Educ., North York Twp., 7 Kenneth St., Willowdale, high school in York Mills Area. $1,600,000.

▲ P.E.I., Charlottetown — PUBLIC BLDG. — Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. plans by E. A.

BROS tip sheet

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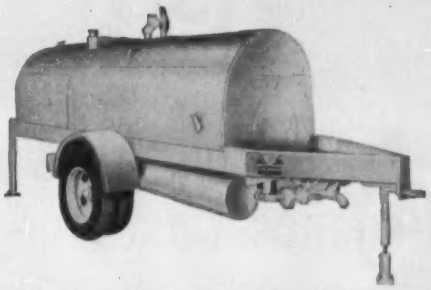
NEW 100 HP PORTABLE STEAM GENERATOR POWERS PILE HAMMERS AND ASPHALT PLANTS



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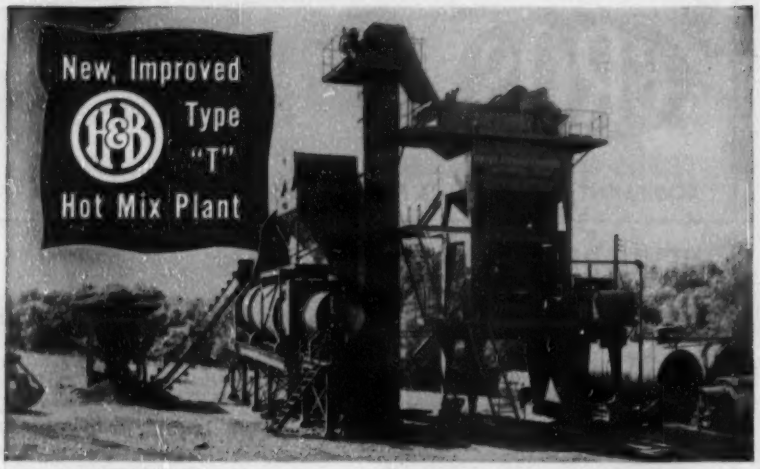
☐ "Bituminizer" asphalt distributor

☐ Bros "Dual-Heat" combination unit including portable steam generator and asphalt circulator



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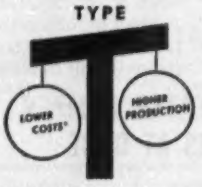

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Gardner, c/o owner, ch. archt., 6 or 7-story public bldg. to house Govt. Dpts. $3,500,000. CD 8/5/48.

Que., Montreal—SCHOOL—Polytechnic School, 1430 St. Denis St., school, $500,000. Ignace Brouillet, 1430 St. Denis St., c/o owner, engr.

COMMERCIAL BUILDINGS

▲ Calif., Buena Park—DWELLINGS, etc.—Aldon Constr. Co., 9838 E. Belmont Ave., Bellflower, 2,000 dwellings and shopping center, $7,000,000.

Calif., Colton—DWELLING—H. Truman Browne, 4500 Imperial Hy., Inglewood, plans by L. C. Major & Assoc., 11015 S. Paramount Blvd., Downey, 89 frame, stucco dwellings in Tract 4223, $750,000.

▲ Calif., Lakewood — DWELLINGS — Lakewood Estates Unit 4, c/o L. C. Major & Assoc., archts., 11015 S. Paramount Blvd., Downey, 136 frame, stucco dwellings, Tract 19981, $1,000,000.

▲ Calif., Long Beach—STORE—Walker's Department Store, 4th and Pine Sts., branch store in Los Altos Shopping Center, East Long Beach, $4,000,000. Welton Becket & Assocs. and Murray Erik Assoc., 5657 Wilshire Blvd., Los Angeles, engrs.-archts.

Calif., Los Angeles—CHURCH—White Merial Church of Seventh Day Adventists, 412 N. Boyle Ave., concrete, brick, church, 420 N. Bailey St. $500,000.

Calif., Reseda—DWELLINGS—Acre Corp., 9700 W. Pico Blvd., Los Angeles, 69 frame, stucco dwellings in Enadia Way. $759,000.

▲ Ill., Chicago Heights—SHOPPING CENTER—Charles L. Schrager Co., 110 S. Dearborn St., Chicago, Zone 3, plans by Jens Jensen, 110 S. Dearborn St., Chicago 3, Ill., shopping center, 10 St. and Western Ave., 27-acres, $5,000,000.

▲ Kan., Kansas City—DEPARTMENT STORE—W. T. Grant Co., 1441 Broadway, New York, N. Y., department store, $1,000,000.

Kan., Wichita—SCOTTISH RITE—Elmo Lodge of Perfection, Scottish Rite, First and Topeka Sts., plans by Overend & Boucher, Brown Bldg., Scottish Rite Bldg. addn. $500,000.

La., Alexandria—STORE—J. C. Penney Stores, Charles S. Weems, mgr., Alexandria, 1 story store, $500,000.

N. Y., New York—OFFICE—American Radiator & Standard Sanitary Corp., 40 W. 40 St., Zone 18, office bldg. alterations, 40-50 W. 40 St., $855,000. DiStasio & Van Buren, 136 Liberty St., Zone 6, consult. engrs.

▲ O., Garfield Heights—HOSPITAL—Marymount Hospital, 12300 McCracken Rd., hospital addn. $4,000,000.

▲ O., Oakwood—STORE, OFFICE—Talbott Corp., 131 N. Ludlow St., Dayton, 3 story bsmnt. 80x234 ft. store and office on Far Hills Ave. between Carlana and Wonderly Aves., $1,000,000.

O., Springfield—DORMITORY—Wittenberg College, N. Wittenberg Ave., 120-bed dormitory for men. $500,000.

Okla., Claremore—HOUSING—J. L. Burton, Mayo Bldg., Tulsa, 100-unit housing development. $600,000. Owen, Mansur & Steele, 1642 S. Boston St., Tulsa, consult. engrs.

▲ Pa., Conshohocken—SHOPPING CENTER—Phila. National Bank, 1416 Chestnut St., Phila., shopping center, $1,000,000.

Pa., Phila.—RESTAURANTS—Owner, c/o Bishop & Hedberg, 1500 Walnut St., plans by Fridy, Gauker, Truscott & Fridy, 1321 Arch St., drive-in restaurants, Montgomery and Bucks Counties. $500,000.

Pa., Phila.—SHOPPING CENTER—Owner, c/o Lester Cohen, archt., 234 Clinton Pl., Hackensack, N. J. shopping center and parking area. $300,000. Allan Wood Fraser, 234 Clinton Pl., Hackensack, N. J., assoc. archt.

Pa., Phila.—HOTEL—Walnut Park Plaza, c/o Ralph R. Lipshutz, 28 S. 18 St., modernization and renovation of hotel. $500,000.

Tex., Baytown—DWELLINGS—D. L. Huson and Edwin Brown, Almeda-Genoa Rd., Houston, 30 brick veneer dwellings, $310,000; 24 brick, stone dwellings, $335,000; 28 brick, frame dwellings, $355,150, northeast sect. of city.

▲ Tex., Baytown—DWELLINGS—D. L. Huson & Edwin Brown, Almeda-Genoa Rd., Houston, Lot 1, 25 masonry dwellings, $330,000; Lot 2, 21 brick dwellings, $319,500; Lot 3, 28 stone exterior dwellings, $368,000; Lot 4, 31 brick, stone exterior dwellings, $384,100, just outside city limits.

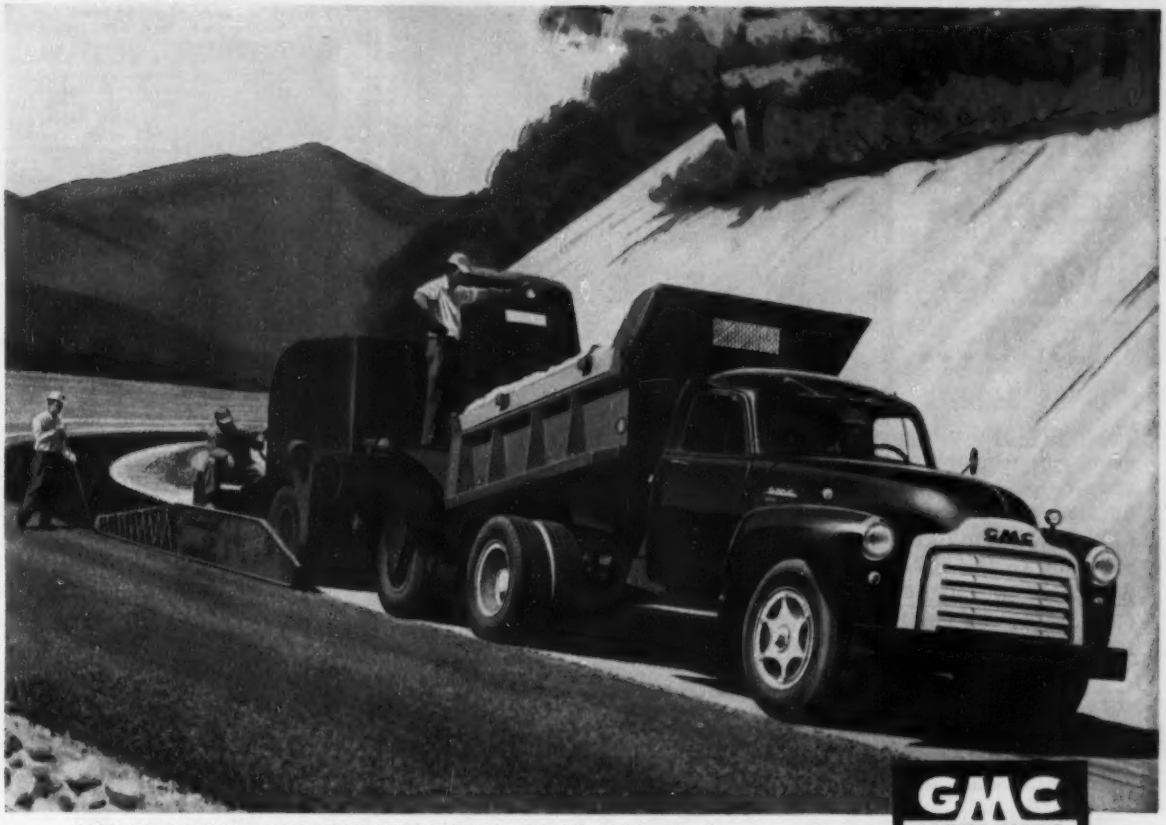
▲ Tex., Corpus Christi—DWELLINGS—Nueces Investment Corp., Jones Bldg., (A) 35 dwellings, $328,450, (B) 30 dwellings, $360,150, (C) 27 dwellings, $310,000, (D) 31 dwellings, $335,125, (E) 40 dwellings, $409,165, (F) 29 dwellings, $300,000; large regional shopping center, Approx. $450,000, in 167-acre tract.

▲ Tex., Dallas—DWELLINGS—Wilson Brown, Ralph D. Daniels & Assocs., 2711 Inwood St., (A) 30 dwellings, $345,500 (B) 39 dwellings, $440,000 (C) 41 dwellings, $398,115 (D) 36 dwellings, $379,000 (E) 28 dwellings, $314,175 (F) 33 dwellings, $368,200. In new areas of Westwood Park and Walnut Hills.

▲ Tex., Dallas—DWELLINGS—Centex Constr. Co., Tom Lively, pres., 4911 Greenville St., plans by Milam & Roper, 368 Casa Linda Plaza, Section 1, 38 brick dwellings, $409,750; 41 dwellings, $428,190; 28 dwellings, $327,500; 36 dwellings, $382,000; 33 dwellings, $368,500; 30 dwellings, $345,000 in extension of Country Club Park Addn.

Tex., Fort Worth—NURSES HOME—Harris Hospital, c/o E. Earngey, Bus. Mgr., 1400 W. Cannon St., plans

(Continued on page 120)



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(Continued from page 118)

by Preston M. Geren, 1607 Fort Worth Nat'l. Bldg. 7-story masonry nurses home, Fifth Ave. $500,000. CD 5/12/52.

▲ **Tex., Freeport**—SHOPPING CENTER, etc.—Freeport Land Co., c/o Dan M. Moody, c/o Abstract & Title Bldg., Houston, shopping center, $850,000; hotel, Approx. $1,000,000, 9-acre "Tarpon Inn Blk" in downtown area.

▲ **Tex., Houston**—DWELLINGS—Boyer Constr. Co., 5808 Community St., 12 luxury type dwellings, $375,000; 9 luxury type dwellings, $345,000; 6 luxury type dwellings, $300,000. In Creekside Lane, Creekside Manor, etc.

Tex., Houston—DWELLINGS—Brown & Hugen, M. Esperson Bldg., 30 brick veneer dwellings, off Gulfway Terrace.

▲ **Tex., Houston**—DWELLINGS—Built-Right Homes, c/o F. D. & B. F. Schoeneman, 8841 Chocolate Bayou Rd., plans by Larry Sliger, 8228 Grafton St., Section 1 Development, 44 dwellings, $314,000; 55 dwellings, $379,600; 61 dwellings, $395,000; 41 dwellings, $301,500; 48 dwellings, $342,150; 38 dwellings, $300,000. 160-acre tract off 8800 Blk. Chocolate Bayou Rd.

▲ **Tex., Houston** — DWELLINGS — Freeway Development Co., 5519 Lawndale St. (A) 30 frame, masonry trim dwellings, concrete slab fdn., $321,000, (B) 41 brick veneer dwellings, concrete slab fdn., $398,650, (C) 28 frame, brick trim dwellings, concrete slab fdn., $310,000, (D) 38 brick veneer dwellings, concrete slab fdn. $391,475, (E) 44 brick, stone dwellings, concrete slab fdn., $419,000, (F) 36 brick veneer dwellings, concrete slab fdn., $368,500, (G) 47 misc. types dwellings, concrete slab fdn., $435,175, between city limits and Pasadena Tunnel.

▲ **Tex., Houston**—DWELLINGS—A. Mascari, Builders, 2130 Chantilly St., 29 dwellings, $326,500; 34 dwellings, $369,150; 26 dwellings, $310,700; 39 dwellings, $388,000; 41 dwellings, $421,750; 37 dwellings, $372,125, northwest sect. of city, north of Oak Forrest.

Tex., Houston—DWELLINGS—H. A. Morris, 510 New Haven Dr., 25 brick veneer dwellings, concrete slab fdn., off Gulfway Terrace, $300,000.

Tex., Houston—APARTMENT—H. Raizes-M. Rauch and Saul Gerber, 2425 Mauroneal St., plans by Anthony Luciano & Assocs., 3065 Golfcrest St., 54 unit brick, redwood exterior, Garden-Park type apartment. $350,000.

Tex., Houston—IMPRV. HOTEL—Shamrock Hotel, McCarthy Center, plans by Joseph Huston, c/o owner, imprv. refurbishing existing Shamrock Hotel. $300,000.

▲ **Tex., Houston**—DWELLINGS—Twenty One Realty Co., c/o D. E. Carter, pres., and c/o Deutser Bros., Shell Bldg., 34 dwellings, $327,100; 30 low-priced dwellings, $300,000; 39 dwellings, $349,165; 25 brick dwellings, $305,500; 36 dwellings, $341,000; 29 dwellings, $300,000 in Fourth Zone of Greenwood Village, off Hardy Rd., near here.

Tex., Lubbock—DWELLINGS—Fields & Lewis, 1921 Avenue Q, 33 frame dwellings. $315,000.

Tex., Pasadena—DWELLINGS—T. E. Braswell, Developer, 702 Mulberry Lane, Houston, 27 frame, masonry dwellings, concrete slab fdn., near South Ave., $333,500; masonry shopping center, $500,000.

▲ **Tex., Pasadena**—DWELLINGS—Embe Development Co., 101 Bearle St., Houston, (A) 35 dwellings, $345,000; (B) 28 dwellings, $300,000; (C) 32 dwellings, $322,500; (D) 38 dwellings, $365,150, Third Sect., Frontier East Addn.

Tex., Pasadena—SHOPPING CENTER—Embe Development Co., 101 Bearle St., Houston, 1 story 40,000 sq. ft. masonry shopping center, third sect. of Frontier East Addn. $350,000. C. E. Pearson, 1010 Winbern St., Houston, consult. engr.

Tex., Port City—BANK—Port City State Bank, Port City, plans by Mackie & Kamrath, 2713 Ferndale St., Houston, 1 story, 100x100 ft., steel, cut stone bsmnt. bank, etc. $300,000. Walter P. Moore, 2 Pinedale St., and R. L. Benkins, 2622 Richmond St., Houston, consult. engrs.

▲ **Tex., San Antonio**—DWELLINGS—W. H. Barnes Real Estate Co., 1418 W. Hildebrand Ave. 14 stone dwellings, concrete pier and beam fdn., $315,000; 24 brick, stone, wood paneling dwellings, concrete slab fdn., $378,125; 18 brick, stone dwellings, concrete pier and beam fdn. $370,500; 20 brick dwellings, concrete pier and beam fdn., $390,000 in Sect. 4 of Hollywood Park, off Hy. 281.

▲ **Tex., San Antonio**—DWELLINGS—Bellaire Lumber Co., Inc., 7903 S. Flores St., 39 frame dwellings, concrete slab fdn., $355,000; 30 frame residences, concrete slab fdn., $323,185; 36 frame, brick trim dwellings, concrete slab fdn., $344,155; 28 frame, masonry trim dwellings, concrete slab fdn., $336,500, in new exten. of Bellaire Subdivision.

Tex., Wichita Falls—SUPERMARKET—Safeway Stores, Inc., Wichita Falls, steel, brick, glass block supermarket. $400,000.

▲ **Alta., Calgary**—OFFICE—Sun Oil Co., 600 Barron Bldg., plans by Stevenson & Dewar, 340 7th Ave. W. Calgary, office, southwest corner 8th Ave. and 7 St. W. $1,000,000.

Ont., Kitchener—SHOPPING CENTER—Principal Investments, 67 Richmond Rd. W., Toronto, 1 and 2 story, 146x580 ft. concrete, brick shopping center, Edna St. $500,000.

▲ **Que., Montreal**—OFFICE—J. L. Gewurz, 1449 St. Alexander St., plans by Greenspoon & Assocs., 4151 W. Sherbrooke St., 10 story, concrete, steel, brick, stone office. $3,000,000.

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330 W. 42nd St., New York 36, N. Y.

▲ Que., Quebec City—MEDICAL COLLEGE—Laval University, Quebec City, plans by Lucien Mainguy, 1045 Chaumont Ave., Sillery, medical college. $3,000,000. CD 1/2/48.

Sask., Regina—APARTMENT BLOCK—Owner, c/o Drope & Hosie Ltd., 1747 Scarth Ave., 60-suite apartment block, Albert St. and College Ave. $750,000.

INDUSTRIAL BUILDINGS

Calif., El Segundo—INDUSTRIAL—Bruin Metal Products and Western Decorating Co., El Segundo, 110x230 ft., precast concrete industrial bldg. $150,000. George Novikoff, 7617 Crenshaw Blvd., Los Angeles, consult. engr.

Calif., El Segundo—WAREHOUSE—Northrup Aircraft Corp., 1001 E. Broadway, Hawthorne, 200,000 sq. ft. concrete tilt-up warehouse, $1,000,000.

Calif., Inglewood—PLANT—Ross Perrino, c/o Paul J. Tolen, consult. engr., 8217 Beverly Blvd., Los Angeles, 65x147 ft., reinforced brick heat-treat plant, $100,000.

Calif., Monterey Park—FACTORY—Eddy D. Field Co., c/o Paul J. Tolen, consult. engr., 8217 Beverly Blvd., Los Angeles, 125x200 ft., reinforced brick factory, $125,000.

▲ Calif., Torrence—PLANT—Bethlehem Pacific Coast Steel Corp., 20 and Illinois Sts., San Francisco, structural steel fabricating plant, $4,000,000-$5,000,000.

Ill., Chicago—PLANT—World Steel Corp., 30 N. LaSalle St., plant, near Torrence and 130 Sts. $300,000.

Ind., Anderson—PLANT—Gospel Trumpet Co., Anderson, plans by John Kane, church archt., Church of God, Anderson, enlarge, remodel publishing plant, $300,000.

▲ Ind., Kokomo—PLANT—Kokomo Gas & Fuel Co., Edward M. Hahn, pres., plant imprvs. incl. large storage tank, $1,500,000.

▲ Ind., South Bend—SUB-STATION—Indiana & Michigan Electric Co., J. B. Ball, mgr., 2101 Spy Run Rd., Fort Wayne, sub-station, $2,600,000.

Ky., Louisville—WAREHOUSE—Brown-Forman Distillers, Inc., 1908 Howard St., plans by Joseph & Joseph, Speed Bldg., distillery warehouse, $82,000; fermenter bldg. for distillery, $82,000, E. R. Ronald & Assoc., 554 S. Third St., consult. engrs.

▲ Mich., Grand Rapids—PLANT—Lear, Inc., William P. Lear, chn., 110 Ionia St. N.W., mfg. plant and service plant addns., at Kent County Airport. $3,000,000.

▲ Neb., Omaha—PLANT—Central Fibre Products Co., Omaha Div., Quincy, Ill., plans by Cecil A. Martin & Assocs., Karbach Block, fabrication plant, 10 and Missouri Aves. $1,000,000.

Neb., Omaha—GARAGE—Northwestern Bell Telephone Co., 19 and Douglas Sts., plans by N. S. Wallace, Omaha Nati. Bank Bldg., garage for company cars and trucks, 75 and Pacific Sts. $125,000.

Neb., Sidney—GRAIN ELEVATOR—Farmers Co-operative Grain Co., Sidney, grain elevator. $160,000.

N. J., Lakewood—BAKERY, etc.—Ben & Emanuel Goldstein, 235 Cary Ave., plans by James W. Mancuso, 9 Memorial Parkway, Long Branch, bakery, store, and office. $115,000.

N. J., Lawrenceville — MANUFACTURING — Congoleum-Nairn Inc., P. O. Box 401, Trenton, mfg. bldg. addns., alterations. $250,000.

▲ O., Cleveland—PLANT—Ford Motor Co., 3000 Schaefer St., Dearborn, Mich., stamping plant addn., at Walton Hills. $3,000,000.

O., Columbus—WAREHOUSE, OFFICE—American Sales & Distributors, Inc., 33 N. Grubb St., 1 story 40,000 sq. ft. warehouse, office and display quarters. $400,000.

O., Columbus—WAREHOUSE—Cussins & Fearn Co., 44 W. Chestnut St., 1 story, 300x350 ft. masonry warehouse, 3636 Indianola Ave. $500,000.

O., Toledo—WAREHOUSE, etc.—Treu House of Munch, Inc., 1601 Dorr St., plans by Horace Coy, 1716 Heatherdowns St., warehouse and office, High St. $100,000.

▲ Okla., Tulsa—PLANT—Continental Baking Co., 509 S. Frisco St., Tulsa, baking plant, 11 and Sheridan Sts. $1,250,000.

Pa., Harrisburg—FACTORY—Carlisle Shoe Co., 1408 Vernon St., plans by Starr & Long, 410 N. 2nd St., 65,000 sq. ft. shoe factory on Rte. 22 By-Pass east of city, $500,000.

Pa., Latrobe—BREWERY—Latrobe Brewing Co., Latrobe, plans by A. L. Pohland, Latrobe, 3 story brick, steel, steel frame brewery. $350,000.

Pa., Norristown—WAREHOUSE—Charles E. Raphaelson, 106 W. Brown St., warehouse, $100,000.

Tex., Dallas—SALES and SERVICE—Mohr Chevrolet Co., 1909 Bryan St., plans by Hidel & Decker, 2814 Fairmount St., sales and service bldg. $450,000.

Tex., Longview—PLANT—Pittsburgh Screw & Bolt Corp., Colona Mfg. Div., 2719 Preble Ave., Pittsburgh, Pa. mfg. plant. $500,000.

▲ Tex., San Marcos—MILL—Cone Mills, Inc., Greensboro, N. C., textile mill main bldg. $8,000,000; general area earthwork, grading, $37,500. Lockwood Greene Engineers, Inc., Montgomery Bldg., Spartanburg, N. C. and Frank T. Drought, 342 W. Woodlawn St., San Antonio, consult. engrs. Dan McConnell, c/o owner, ch. engr. CD 1/25.

Tex., Spring—SAWMILL, etc.—Bayer Lumber Co., Spring, reconstr. sawmill and yard. $100,000.

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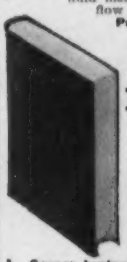

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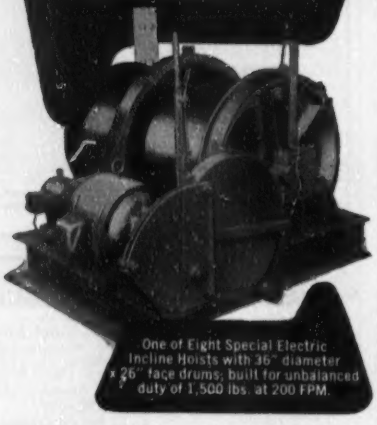

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▲ **Alta., Lethbridge**—PLANT—Horton Steel Works Ltd., Northern Ontario Bldg., Toronto, Ont., erecting steel plant, $2,000,000.

▲ **Que., Montreal**—PLANT—Christy Brown & Co. Ltd., 200 Lakeshore Rd., Toronto, Ont., biscuit plant, on 26-acre site, Viau St. $1,000,000. Surveyor & Assocs., 1440 W. Ste. Catherine St., consult. engrs.

UNCLASSIFIED

Calif., Petaluma—PARKING FACILITIES—City, City Hall, defeated $200,000 bonds, addnl. off-street parking facilities. CD 5/12.

▲ **Colorado, Utah, Wyoming, Idaho, Oregon and Washington**—GAS LINE—Pacific Northwest Pipe Line Co., M & M Bldg., Houston, Tex., 1,466 mi. main gas line 106 mi. lateral supply lines, 327 mi. extensions, 14 compressor stations, from Ignacio, Colo. to Bellingham, Wash., FPC approved, $160,000,000.

† **N. H., Mount Washington**—FACILITIES—U.S. Eng., 857 Commonwealth Ave., Boston 15, Mass., plans by Perry, Shaw & Hepburn, Kehoe & Dean, archts.-consult. engrs., 955 Park Square Bldg., Boston, Mass., facilities, DA-19-016-ENG-3175.

New Mexico—TELEPHONE RURAL LINES—Penasco Valley Telephone Co-operative, c/o Paul Frost, Artesia, 450 mi. pole telephone rural lines, Artesia. $225,000. H. N. Roberts & Assocs., 1310 Avenue Q, Lubbock, Tex., consult. engrs.

Pa., Haverford—FIELD HOUSE—Haverford College, Haverford, plans by Carroll, Grisdale & Van Alen, 204 W. Rittenhouse Square, Phila., field house. $300,000.

Pa., Yeadon—SWIMMING POOL, etc.—Yeadon Swim Club, 1121 Serrill Ave., plans by A. A. Ianniciari, 117 S. 17 St., Phila., swimming pool, clubhouse, bathhouse and recreation area, $100,000.

South Dakota—RURAL DISTRIBUTION LINES—Moreau-Grand Electric Co-operative, Timber Lake, 372 mi. rural distr. lines, sys. imprvs., Dewey Co., $390,000. Scott Eng. Co., Watertown, consult. engr. CD 7/17/52.

Texas — TELEPHONE LINES — Telephone Co-operative, Muleshoe, 875 mi. rural pole telephone lines, Muleshoe area, $650,000. H. N. Roberts & Assocs., 1310 Avenue Q, Lubbock, consult. engrs. CD 4/28/52.

Tex., Amarillo—PARK, etc.—City, City Hall, Carver Park exten., imprvs., $175,000; concrete swimming pool, $75,000. Hare & Hare, 114 W. 10 St., Kansas City, Mo., consult. engrs. Stanton Smith, city engr. CD 5/19.

Tex., Big Spring—WATER INJECTION—Standard Oil Co. of Texas, City Natl. Bank Bldg., Houston, 3 unit water injection proj. in Howard-Glasscock Field. $275,000.

Tex., Fort Worth—RECREATION BLDG.—City, City Hall, plans by Herman G. Cox, 415 N. P. Anderson Bldg., Sylvania Municipal Park Recreation Bldg. $150,000. CD 10/11/45.

Tex., Garden City—WATER INJECTION—Shell Oil Co., Shell Bldg., Houston, water injection proj. in Howard-Glasscock Fields. $175,000.

Tex., Pecos—GAS and WATER INJECTION—Buckles & Hostetler, Pecos, gas and water injection proj. in Pecos Valley High Gravity Field. $150,000.

Tex., San Antonio—TELEVISION STATION—KCOR, Inc., 310 S. Flores St., plans by Carf Ross, Edwin Nicholson Assocs., archts.-engrs., 111 Auditorium Circle, 8,000 sq. ft. television station, Martinez St. $100,000.

Tex., Shackelford—WATER INJECTION—Pemeta Oil Co & Jesse L. Douglas, Shackelford, water injection proj., in 4 areas of Shackelford Co. regular field. $350,000.

Tex., Wichita Falls—WATER INJECTION—W. T. Waggoner Estate, Burkburnett, water injection proj. Wichita Co. regular field. $200,000

▲ **Washington**—GAS SYSTEM EXPANSION—Cascade Natural Gas Corp., Securities Bldg., Seattle, Zone 4, expansion of system to provide natural gas distr. in Bellingham, Bremerton, Yakima, Wenatchee, Zillah, Granger, Sunnyside, Toppenish, Grandview, Prosser, Walla Walla, Pendleton and Clarkston, $2,000,000.

▲ **Washington**—GAS SYSTEM—Washington Gas & Electric Co., 101 S. 10 St., Tacoma, expansion of gas system to provide natural gas distr. in Tacoma, Olympia, Tumwater, Everett, Centralia, Chehalis, Auburn, American Lake, Fort Lewis, Puyallup and Sumner, $6,500,000.

▲ **Wash., Seattle**—GAS SYSTEM—Seattle Gas Co., 1507 4 Ave., Zone 1, expansion of system to provide for natural gas, $14,000,000.

▲ **Wash., Spokane**—GAS SYSTEM—Spokane Gas & Fuel Co., N. 25 Monroe St., Spokane, expansion of system for natural gas distr. $6,000,000.

Alaska, Fairbanks—LIGHTING SYS.—City, City Hall, street lighting sys. $100,000.

▲ **Puerto Rico**—DOCKING FACILITIES—Puerto Rico Transport Auth., San Juan, filling, diverting Puerto Nuevo River, drainage, sewers, water supply, electrical work, streets, grain elevator, slaughterhouse, markets, wharves and warehouses. $22,000,000. Knappen-Tippetts-Abbett-McCarthy, 62 W. 47 St., New York, N. Y., consult. engrs. CD 7/26/46.

▲ **Que., Montreal**—PARKING GARAGE—Municipality, City Hall, underground parking garage, Dominion Square, $3,000,000. H. K. Ferguson Co. of Canada Ltd., Dominion Square Bldg., Montreal, consult. engr. CD 10/31/46.

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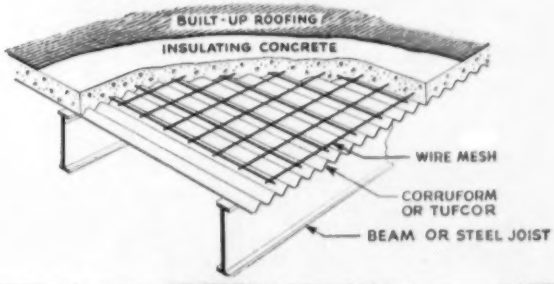

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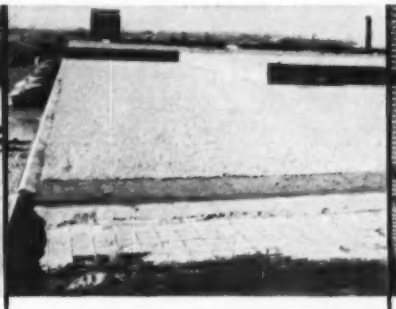

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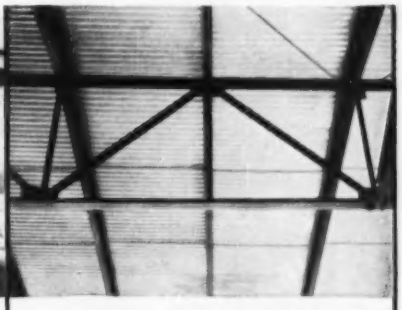

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Bids—Low Bids—Contracts—Second Section

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STATE HIGHWAY LETTINGS
BRIDGES
July 12 Connecticut — July 14 Maine
STREETS AND ROADS
July 12 Connecticut — July 13 Massachusetts

BIDS ASKED—BUILDINGS

▲† **Me., Brunswick**—HEATING PLANT—BA 7/14—Dist. P. Wks. Office, 495 Summer St., Boston 10, Mass., addns. to heating plant, U. S. Naval Air Station, NOY 79813, Spec. 38327. $1,000,000. Extended date. CD 6/1.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **E. J. Pinney Co., Inc.**, 220 Dwight St., West Springfield, Mass. LB $1,218,900, est. $1,000,000. HIGH SCHOOL, Bliss Rd., William St., Grassy Gutter Rd., LONGMEADOW, MASS. Town, School Dist., 811 Longmeadow St., Longmeadow, Mass. Bids June 24. CD 6/2.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
July 13, 20 Maryland
STREETS AND ROADS
July 13 Maryland — July 22 New York

BIDS ASKED—BUILDINGS

▲ **N. Y., Brooklyn**—SCHOOL—BA 8/3—Bd. Educ., Bureau Constr., 49 Flatbush Ave. exten., Zone 1, general constr., plumbing and drainage, heating and ventilating, electrical work and lighting fixtures for P. S. 59. School. $1,863,880. Plans deposit $24 general constr., $8 each others. CD 8/13/45.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **NEW YORK**—Bureau Contracts & Accounts, the Governor Alfred E. Smith State Office Bldg., Albany,
Tuckahoe Constr. Co., Inc., 116 Columbus Ave., Tuckahoe, N. Y., CA $1,024,020, est. $1,084,000, paving twin 36-ft. concrete traffic arteries, lighting, fencing and misc. landscaping work 0.95 mi. Sect. Major Deegan Expressway exten. in vicinity of Van Cortlandt Park, Bronx Co.;
Klevens Corp., 3 Federal St., Yonkers, N. Y., CA $1,466,230, est. $1,714,000, grading, drainage, paving work, constr. five span 1,900 ft. steel concrete viaduct to carry Cross Bronx Expressway over Bronx River Parkway and Delaware Ave. 2.32 mi. Bronx Co.;
Maxim Kranz & L. S. Martin, Troy, N. Y., CA $601,170, est. $734,000, reconstr. with 24 ft. c. conc. 3.94 mi. Rte. 14 from Holbrook Rd., just north of State Thruway and extending northward to Ontario-Wayne Co. line, Ontario Co. Grand total $3,091,420. Bids May 20. CD 5/24, under LB.

▲ **Grow Constr. Co., Inc.**, 313 W. 53 St., New York 19, N. Y., LB $1,862,851, Contr. LT-160.009, constr. New Jersey Land Sect. for Third Tube of Lincoln Tunnel, NEW YORK-NEW JERSEY. The Port of New York Auth., 111 8th Ave., New York 11, N. Y. Bids June 29. CD 5/27.

▲ **Psaty & Fuhrman, Inc.**, 369 Lexington Ave., New York, N. Y. CA $4,672,000, general constr. E. 73 St. Incinerator, Manhattan Boro, NEW YORK, N. Y. Dpt. P. Wks., Municipal Bldg., New York 7, N. Y. Bids May 19. CD 5/21, under LB.

▲ **Roberts & Schaffer**, 1315 Oliver Bldg., Pittsburgh, Pa., CA Approx. $6,000,000. steel, concrete barge unloading facilities, conveying and coal handling machines, along Youghiogheny River, CLAIRTON, PA. U. S. Steel Corp., Wm. Penn Pl., Pittsburgh, Pa.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Morewood at Cold Spring Hills Homes**, c/o William Paul LaVallee, archt., 231 Post Rd., Westbury, N. Y. Owner Builds. $2,500,000. 100 HOUSES, tract at Jericho Turnpike and Hartman Hill Rd., HUNTINGTON, N. Y.

▲ **Bartroy Constr. Corp.**, 391 E. 149 St., New York 55, N. Y. Owner Builds. $1,000,000. 6 story APARTMENT, Arlington Ave. and 232 St., NEW YORK, N. Y. CD 1/8.

▲ **Quaspeck Park Homes**, c/o Alwin Cassens, Jr., archt., 145 S. Franklin Ave., Valley Stream, N. Y. Owner Builds. $1,300,000. 100 HOUSES, Rte. 9-W, NYACK, N. Y.

Jano Homes, c/o Alwin Cassens, Jr., archt., 145 S. Franklin Ave., Valley Stream, N. Y. Owner Builds. $700,000. 50 HOUSES, Miller Pl., west of Wantagh Ave., PLAINEDGE, N. Y.

▲ **Haypath Estates**, c/o Alwin Cassens, Jr., archt., 145 So. Franklin Ave., Valley Stream, N. Y. Owner Builds. $1,300,000. 130 HOUSES, Plainview and Haypath Rds., PLAINVIEW, N. Y.

▲ **Birchwood Park at Westbury Hills**, c/o Stanley H. Klein, archt., 89-31, 161 St., Jamacia, N. Y. Owner Builds. $3,400,000. 200 HOUSES, near Exit 34 of Northern State Parkway, WESTBURY, N. Y.

▲ **Valmor Homes**, c/o David Levinson, archt., 163-18 Jamaica Ave., Jamaica, N. Y. Owner Builds. $1,200,000, Sects 2 and 3, 75 HOUSES, tract, 157 St. and Willetts Point Blvd., WHITESTONE, N. Y.

▲ **Nicosia Bros.**, 1 Beechwood Ave., East Paterson, N. J., Owner Builds. $1,350,000. 100 HOUSES on tract on Grand Ave. to be called Garden State Homes, MONTCLAIR, N. J.

▲ **Old Bridge Constr. Co.**, c/o John M. Garbiel, State Hy. No. 17, Paramus, N. J. Owner Builds. $2,000,000. 232 HOUSES on tract on Old Englishtown Rd., OLD BRIDGE, N. J.

▲ **Jerry Lepre & Sons, Inc.**, Red Bank, N. J., CA, $1,350,000 65 HOUSES on tract on Sycamore Ave., NEW SHREWSBURY, N. J. Sycamore Manor Homes, c/o contractor.

▲ **Colonia Terrace Park Homes**, c/o Erwin Gerber, archt., 11800 Raymond Blvd., Newark, N. J. Owner Builds. $1,300,000. 100 HOUSES on tract on McFarlane Rd., WOODBRIDGE TWP., N. J.

▲ **Berkibile Bros.**, 625 Swank Bldg., Johnstown, Pa. LB $1,162,778. 7 story, brick, steel frame HOSPITAL addn., alterations, JOHNSTOWN, PA. Conemaugh Valley Memorial Hospital, Johnstown, Pa. Bids June 23. CD 6/2.

▲ **Ragnar Benson, Inc.**, 2 Gateway Center, Pittsburgh, Pa., CA Approx. $1,500,000. 1 story, 50x170 ft., brick, block and 2 story, 55x182 ft., block, metal, steel LABORATORY and OFFICE, Baldwin Boro. PITTSBURGH, PA. Jones & Laughlin Steel Corp., Gateway Center, Pittsburgh, Pa. Bids June 1. CD 5/20.

▲ **Siesel Constr. Co.**, 3530 Forbes St., Pittsburgh, Pa., CA $4,500,000. 8 story, bsmnt., brick, steel APARTMENT, GARAGE, PITTSBURGH, PA. University Square, Inc., Schenley Hotel, Pittsburgh, Pa. Bids May 10. CD 4/9.

▲† **Chas. H. Tompkins Co.**, 907 16 St. N.W., Wash., D. C. and J. A. Jones Constr. Co, 209 W 4 St,, Charlotte 1, N. C. CA $19,944,451. N.S.A. constr. OPERATIONS BLDG., appurtenant facilities, FORT GEORGE G. MEADE, MD, U. S. Eng. 24 St. and Maryland Ave., Baltimore, Md. CD 6/22, under LB.

▲ **Fuller Constr. Co.**, Munsey Bldg., Wash., D. C., CA, $3,500,000, 10 story OFFICE, 800 Block, 16 St. N.W., WASH, D. C. American Federation of Labor, 901 Massachusetts Ave. N.W., Wash., D. C. Awarded June 21. CD 5/3.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
STREETS AND ROADS
July 14 Louisiana

BIDS ASKED—BUILDINGS

▲ **Fla., Tallahassee**—OFFICE—BA 8/5—State Imprvt. Comn., Caldwell Bldg., state office, $2,000,000. Ernest J. Stidolph, P. O. Box 93, Apalachicola, archt. CD 7/30.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **LOUISIANA**—Jointly by Parish of Jefferson and Parish of St. Tammany, State of Louisiana, Office Secy. of Jefferson Parish Jury, Court House, Gretna,
Louisiana Bridge Co., Kenner, La. (Brown & Root, Inc., 4100 Clinton Dr., Houston, Tex. and T. L. James & Co., Ruston, La.). CA $30,677,210 Greater New Orleans Expressway and approaches across Lake Pontchartrain. CD 6/25, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲† **Forcum-James Co., Inc.**, 1489 Thomas St., Memphis, Tenn., LB, $1,467,302, 2 LABORATORY BLDGS. and SHOPS, Redstone Arsenal, HUNTSVILLE, ALA. U. S. Eng., P. O. Box 1169, Mobile 7, Ala. CD 11/30/51.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
July 13, 20 Ohio — July 14 Michigan
STREETS AND ROADS
July 13, 20 Ohio — July 14 Michigan
July 20 Wisconsin

BIDS ASKED—BUILDINGS

▲ **Mich., Coldwater** — HOSPITAL — BA 7/13 — State, A. N. Langius, dir. State Bldg. Dpt., Lewis Cass Bldg., Lansing, 3 story hospital addn., Coldwater Home & Training School. $1,288,000. Plans deposit $50. Extended date. Harley, Ellington & Day, Inc., 153 E. Elizabeth St., Detroit, archt. CD 7/10.

▲ **Wis., Wauwatosa** — HIGH SCHOOL — BA 7/21 — Lutheran High School Assn. of Greater Milwaukee, 1859 N. 13 St., Milwaukee, Lutheran High School, level bldg., 40 rooms for 1,000 students. $2,000,000. Grassold-Johnson & Assocs., 34 N. Jefferson St., Milwaukee, archts. CD 2/17/53, under Wis., Milwaukee.

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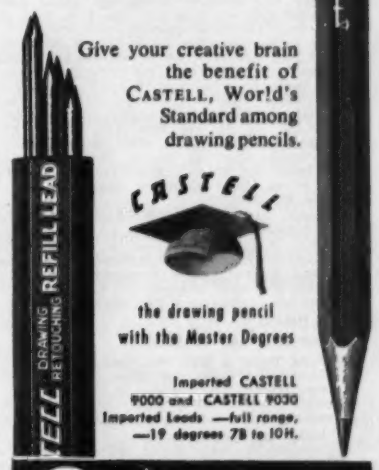

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▲ O., Kent—SCHOOL—BA 7/27—Dpt. P. Wks., Ohio Dpts. Bldg., Columbus, Kent State "University School" at Kent State University. $1,500,000. Plans deposit $50 general constr., $40 each mech. Fulton, Krinsky & DeMotte, 6014 Euclid Ave., Cleveland, Zone 3, archts. H. G. Allen, c/o owner, cons. archt.

SOON LETS CONTRACT—BUILDINGS

▲ Ill., Chicago—PLANT—Albert Schwill & Co., 141 W. Jackson Blvd., soon lets contract, melt plant addn. $1,000,000. Friedman, Alschuler & Sincere, 223 W. Jackson Blvd., Chicago, Zone 6, archts. CD 1/7.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ OHIO—State Hy. Dpt., Columbus, Zone 15,
C. E. Edgington & Son, 1220 S. Main St., Findlay, O., LB $121,974, est. $144,600, Type T-35 and structures 0.492 mi. CR No. 118, S-1178 (1), Allen Co.;
C. F. Replogle, Box 308, Circleville, O., LB $1,646,829, est. $1,874,500, Type T-71 and structures 7.773 mi. USR 42-(3.05-8.03), FI-1015 (1), Ashland Co.;
Highway Maintenance Co., 2 S. Congress St., Athens, O., LB $284,825, est. $342,600, Type T-32 on B-20 and structure 3.169 mi. CR No. 110, S-434 (3), Athens Co.;
Elmer Borchardt, Inc., Castalia, O., LB $105,064, est. $97,000. Type T-35, 1.495 mi. SR 269-9.21, S-38 (3), Erie Co.; LB $85,222, est. $75,000, Type T-35, 1.455 mi. USR 6-(7.59-7.85); SR 387-(0.00-0.59), City of Sandusky, Erie Co.;
Paul Kent, Inc., Box 598, Granville, O., LB $89,700, est. $102,000. Type T-35 and structure 0.454 mi. SR 312-1.60 S-1052 (2), Fairfield Co.;
W. J. Seidensticker Co., 3585 E. Fulton St., Columbus, O., LB $209,684, est. $214,600, Type T-32 on B-119 and structure, 1.051 mi. SR 70-16.70, S-1123 (1), Highland Co.;
Tri-State Asphalt Corp., S. Broadway, Martins Ferry, O., LB $145,489, est. $145,000. Type T-35 6.813 mi. SR 214-(0.00-0.05), Belmont Co.;
The Horvitz Co., 913 Midland Bldg., Cleveland, O., LB $91,604, est. $97,500, Type T-35, 2.428 mi. SR 94-(7.59-7.89), City of Parma, Cuyahoga Co.; LB $122,108, est. $135,000, Type T-35, 5.359 mi. USR 20-(0.00-4.51), Cities of Wickliffe and Willoughby, Lake Co.;
Fuller Davies Co., 1111 W. Court St., Cincinnati, O. LB $77,879, est. $83,150, Type T-35, 5.569 mi. SR 47-(14.22-19.68), Village of Versailles, Drake Co.;
Kulka Industrial Corp., 826 N. Webb Ave., Alliance, O., LB $71,988, est. $85,200, Type T-35 on B-119 and structure 0.194 mi. SR 753-0.33, Fayette Co.;
The Great Lakes Constr. Co., Box 2278 Brooklyn Station, Cleveland, O., LB $139,238, est. $151,500, Type T-35 and structure 0.749 mi. USR 322-11.45, Geauga Co.;
Ohio Road Imprvt. Co., 30 E. Broad St., Columbus, O. LB $80,977, est. $77,050, Type T-35, 2.845 mi. USR 224-(0.31-9.43), Village of Lodi, Medina Co.; LB $307,962, est. $273,500, Type T-35, 5.235 mi. SR 82-(0.00-1.63), Trumbull Co.;
Sidwell Bros., Rte. No. 2, S. Zanesville, O., LB $98,641, est. $100,000. Type T-35 on B-119, Part 1; Type T-35 Part 2, 4.157 mi. SR 345-1.54, (0.00) (1.67), 7.84, Muskingum and Perry Counties;
Soda & Luscher Constr. Co., Warren Ave. Exten. Niles, O. LB $318,244, est. $318,800, Type T-35 on B-119, 1.612 mi. SR 90-1.99, Trumbull Co.;
Stark Constr. Co., 1133 30th St. N.E., Canton, O., LB $65,477. est. $78,800, Type SS-10 and structures 0.272 mi. SR 604-(0.60) (6.21), Wayne Co.;
L. P. Cavett Co., 511 Shepherd Ave., Lockland, O., LB $93,992, est. $102,940, Type T-30, B-35 and T-35 14.82 mi. Delaware, Marion and Union Counties; LB $95,220, est. $138,229. Type T-30, T-32. 23.37 mi. Pike and Scioto Counties;
Edgar Spring, Inc., New Phila., O., LB $65,715. est. $64,100, Type T-35, 9.8 mi. Harrison and Tuscarawas Counties;
The Shelly Co., Thornville, O., LB $108,882, est. $130,930, Type T-30, T-32, 29.48 mi. Athens, Hocking, Morgan and Washington Counties; LB $64,658, est. $69,430, Type T-30, T-32, 17.61 mi. Guernsey, Muskingum and Noble Counties;
Hart Constr. Co., 460 Oberlin Rd., Elyria, O., LB $73,600, est. $84,655, Type T-30, T-31 and T-32, 20.30 mi. Erie, Lorain and Medina Counties. Bids June 22. CD 5/27.

▲ Horvitz Co., Midland Bldg., Cleveland 15, O. LB, $1,088,449, est. $1,196,500, grade, drainage, pave Wilson Mills Rd. from Green to Trebisky Rd., two 28 ft. concrete strips, 4,413 lin. ft., also constr. bridge 362.29 ft. over Metropolitan Park, CLEVELAND, O. Comrs. Cuyahoga Co., Court House, Cleveland 14, O. Bids June 24. CD 5/27.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ Frank Messer & Sons, Inc., Paddock Rd., Cincinnati, O., LB, $1,178,800. new school bldg. for Madisonville Junior HIGH SCHOOL, Madison Rd. and Anderson Pl., CINCINNATI, O. Bd. Educ., 608 E. McMillan St., Cincinnati, O. Bids June 22. CD 5/26.

▲ Martin L. Holman Co., 2431 Langdon Farm Rd., Cincinnati, O. Owner Builds. $1,500,000. 100 one-family, brick bsmnt. HOMES, Vermont Ave., etc., WYOMING, O. Joseph Allen, 4638 Glenway Ave., Cicinnati, O., engr. Awarded June 25.

▲ R. L. Lutgert Constr. Co., 7900 S. Kilpatrick St., Chicago, Ill., Owner Builds. $3,000,000, Scottdale SHOPPING CENTER, near CHICAGO, ILL. Sidney Morris, 134 N. LaSalle St., Chicago, Zone 2, archt.

▲ Clifford Wood, 9321 S. 50 Ave., Oak Lawn, Ill., Own Forces, $1,700,000, 165 HOMES, near OAK-LAWN, ILL. Nordlie & Co., 11100 S. Michigan Ave., Chicago, Ill., archts.

▲ Jos. J. Duffy Constr. Co., 4994 Elston Ave., Chicago, Ill., CA, $1,041,963, Christ the King Theological SEMINARY, WEST CHICAGO, ILL. Francisco Fathers, West Chicago, Ill. Bids June 14, awarded June 22. CD 6/24, under LB.

▲ J. McHugh Constr. Co., 6449 South Park Ave., Chicago, Ill., LB, $771,736, POWER HOUSE;
Power Service Corp., 711 Wesley Temple Bldg., Minneapolis, Minn., LB, $367,400, power piping, WAUWATOSA, WIS. Milwaukee County Institutions & Depts., Wauwatosa, Wis. Bids June 24. CD 6/8.

▲ Reid Patterson, Inc., 233 Briggs Bldg., Birmingham, Mich. Owner Builds. $3,500,000. 106 duplex and 16 single HOUSES, Torry and Haynes Sts., 45 acre site, BIRMINGHAM, MICH.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
July 13 Iowa
STREETS AND ROADS
July 13 Iowa July 15, 16 Kansas

BIDS ASKED—BUILDINGS

Mo., St. Louis—SCHOOL—BA 7/16—Bd. Educ., V. Harry Rhodes, comr. School Bldgs., 911 Locust St., Zone 1, brick, concrete, steel school, 1130 N. Euclid Ave. as replacement for Washington School, $900,000. CD 7/31.

Ia., Mason City—SCHOOL—BA 7/30—Bd. Educ., Mason City, Roosevelt Elementary School. $800,000. Hansen & Waggoner, Mason City, archts. CD 11/11/52.

▲ Tex., Dallas—HIGH SCHOOL—BA 8/3—Dallas Independent School Dist., 3700 Ross St., masonry John B. Hood Junior High School, Hume Dr. and Pleasant Mound, $1,365,000. Fooshee & Cheek, 1907½ N. Harwood St., archts. CD 4/20.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† J. W. Bateson Constr. Co., Irwin-Keasler Bldg., Dallas, Tex. LB $5,925,199, est. $5,946,066. maintenance hangar, 3 multi purpose docks, hot water central heating plant, 2 covered storage bldgs., utilities sys., Forbes Air Force Base, TOPEKA, KAN. U.S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids June 25. CD 6/2.

▲† J. W. Bateson Co., Inc., Irwin-Keasler Bldg., Dallas, Tex., CA, $2,655,085, est. $2,865,517 maintenance hangar, pump station with reservoir, Little Rock Air Force Base, Serial No. ENG-03-050-54-51. JACKSONVILLE, ARK. U.S. Eng., P.O. Box 867, Little Rock, Ark. Bids June 23, awarded June 25. CD 6/3.

▲† Robert E. McKee, 1918 Texas St., El Paso, Tex., LB $2,495,800, est. $2,504,641, hospital, Abilene Air Force Base, ENG-41-443-54-65, ABILENE, TEX. U. S. Eng., 100 W. Vickery St., Fort Worth, Tex. Bids June 25. CD 6/2.

▲† H. B. Zachry Co., c/o Constr. Div., Box 2570, San Antonio, Tex., CA, $2,196,977, AMC warehouse, on Basic Schedule 3, Prop. 1, Basic and Schedule 4, Inv. No. ENG-41-243-54-36, KELLY AIR FORCE BASE, TEX. U. S. Eng., Box 1229, Galveston, Tex. Bids May 28. CD 6/3, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

Henry Carlson Co., 110 E. 10 St., Sioux Falls, S. D., LB, $822,770, general contract Axtell Park Junior High SCHOOL, SIOUX FALLS, S. D. Bd. Educ., 107 High School Bldg., Sioux Falls, S. D. Bids June 17. CD 6/3.

▲ Walter Butler Constr. Co., 1300 Minnesota Bldg., St. Paul, Minn. CA Est. $1,400,000. 4 story HOSPITAL addn., 8 and Vermont Sts., KANSAS CITY, KAN. St. Margaret's Hospital, c/o Tom J. Daly, chn. Hospital Advisor's Bd., 8 and Vermont Sts., Kansas City, Mo. CD 1/5.

▲ Shelby Constr. Co., 1108 Canal St., New Orleans, La. CA Est. $3,500,000. 1 and 2 story, 180,000 sq. ft., SHOPPING CENTER and parking, on 16 acre tract, MISSION, KAN. Mission Shopping Center, Inc., c/o Robt. Muntzel, Mission Development Co., Mission, Kan. Howard T. Fisher & Assoc., 322 W. Washington St., Chicago, Ill., archts.

FAR WEST

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† United Concrete Pipe Corp., Bonita and Stewart Aves., Baldwin Park, Calif., CA, $3,902,977, furnishing labor and materials for earthwork, concrete pipe lines and structures, incl. bifurcation structure, Station 8 plus 36.82 to Station 935 plus 05, Davis Aqueduct, Weber Basin Proj., Spec. DC-4171, UTAH. Bureau Reclamation, Dpt. Interior, Ogden, Utah. Bids June 15. CD 6/17, under LB.

▲ Schmidt Constr. Co., 10145 W. Colfax Ave., Denver, Colo., LB, $689,510, sewage collection lines, Group C; LB, $934,372, sewage collection lines Group B;
Kloepfer Constr., 900 E. Center St., Logan, Utah, LB, $524,275. sewer collection lines, Group D;
Hilton & Carr, Box 527, Ogden, Utah, LB, $281,858, sewage collection lines, Group G;
Statewide Plumbing & Heating, 4474 S. Main St., Salt Lake City, Utah, LB, $1,093,259, sewage collection lines, Group A, SALT LAKE CITY, UTAH. Bd. Co. Comm., Salt Lake Co., Box 206, City-County Bldg., Salt Lake City, Utah. Bids June 17. CD 4/21.

▲ F. W. Case Corp., 926 Lyons St., Newhall, Calif., and HOOD CONSTR. CO., 3002 E. Century Blvd., Inglewood, Calif., LB, $1,502,156, constr. Middle Cross Feeder and Inglewood Laterals from Wadsworth Ave. to Crenshaw Blvd., LOS ANGELES, CALIF. Metropolitan Water Dist. of Southern Calif., 306 W. 3 St., Los Angeles, Calif. Bids June 24. CD 6/9.

▲† Vinnell Co., 1145 Westminster Ave., Alhambra, Calif., LB, $4,633,150, modification hangar and maintainance shop, Edwards Air Force Base, ENG.-04-353-54-103, MUROC, CALIF. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids June 18. CD 6/10.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ R. J. Daum Constr. Co., 6803 West Blvd., Inglewood, Calif., LB, $1,067,000, MUSIC ARTS BLDG., EL CAMINO, CALIF. El Camino Junior College Dist., El Camino, Calif.

▲† George A. Fuller Co., 3100 W. 8 St., Los Angeles, Calif., LB, $6,576,000, Naval HOSPITAL addns., NOY 81916, Spec. 42162, SAN DIEGO, CALIF. Dpt. Navy, Eleventh Naval Dist., San Diego, Calif. Bids June 24. CD 5/25.

▲ Williams & Burrows and Carl Swenson Co., 18 West Orange Ave., South San Francisco, Calif., LB, $1,185,000, constr. RESIDENCE HALL, Units 1 and 2, Santa Barbara Campus, SANTA BARBARA, CALIF. University of California, Santa Barbara, Calif. Bids June 15. CD 5/25.

CANADA

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
STREETS AND ROADS
July 22 Ontario

SOON LETS CONTRACT—BUILDINGS

▲ Que., Montreal—HOTEL FOUNDATIONS—Canadian National Railways, R. O. Stewart, ch. engr., 360 McGill St., soon lets contract foundations for 23 story hotel, Dorchester and Mansfield Sts., plus concrete floors for first two floors. Total est. $20,000,000. CD 8/19.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ Gragg, Inc., 223 Britton Ave., Oklahoma City, Okla., CA Est. $2,900,000 (incl. pipe) 21 mi. 20 in. gas pipe line from Sheridan, Ont. to company plant near Don River, to bring natural gas from USA to Toronto, ONTARIO. Consumers Gas Co., 19 Toronto St., Toronto, Ont. Awarded June 21.

▲ P. Baillargeon Ltd., 7140 Park Ave., Longueil, Que. CA, $1,350,000, water mains and sewers, VILLE JACQUES CARTIER, QUE. Municipality, City Hall, Ville Jacques Cartier, Que. CD 12/30/49.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ Abdo Constr. Co., 1348 North Christian St., Sarnia, Ont., Owner Builds, $5,000,000. 450 brick HOUSES, Reddendale Suburb, 1 mi. west of KINGSTON, ONT. CD 6/28.

ALASKA

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† Lease & Leigland and M-B Contg. Co., 1501 N. 35 St., Seattle, Wash. LB $1,250,000, est. $1,560,098, hard stands and parking apron, ENG-95-507-54-21, FORT RICHARDSON, ALASKA. U.S. Eng., Anchorage, Alaska. Bids June 24. CD 6/9.

BUILDINGS

LOW BIDS AND CONTRACTS

▲† Morrison-Knudsen Co., Inc., 319 Broadway, Boise, Idaho, LB $2,839,489, est. $2,449,744, 50,000 sq. ft. composite QUARTERS and MESS BLDG., two 50 ft. diameter towers, other bldgs. for complete AC&W Station, ENG-95-507-54-88, MIDDLETON ISLAND, ALASKA. U.S. Eng., 4735 E. Marginal Way, Seattle 4, Wash. Bids June 25. CD 6/9.

PUBLIC BUILDINGS

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† Nola & Galib Co., P.O. Box 2423, San Juan, Puerto Rico, CA $1,408,117, Auxiliary Base No. 9, Air Force Missile Test Center, Inv. 54-58, MAYAGUEZ, PUERTO RICO. U.S. Eng., P.O. Box 4970, Jacksonville, Fla. Bids June 4. CD 6/10, under LB.

(Proposal Advertisements see pp. 132 to 135)

Wage raises fall into 10-cent pattern as construction shifts to summer speed

Observers report generally peaceful labor scene despite spot trouble—AFL-UCW dispute threatens at Philadelphia

With the construction industry well into its normal summer stride, a quick check of construction wage negotiations this week indicated a generally peaceful scene—and a fairly uniform average of pay increases throughout the U. S.

There were a few trouble spots here and there—a threatened general strike in Buffalo, N. Y., this week; continuing jurisdictional and wage troubles at the Atomic Energy Commission's big Portsmouth, Ohio, job. But wage boosts seem to have settled into a pattern forecast earlier in the year—at about 10 cents an hour, although a high of 25 cents an hour (to New York bricklayers) had been accepted by both sides some time ago.

ENR's correspondents reported a wage settlement pattern as follows:

• **Pattern in the East**—Philadelphia's 10,000 building tradesmen employed in the homebuilding field negotiated pay raises with the Home Builders' Assn., ranging from 10 cents an hour to 15½ cents (for cement finishers); Miami, Fla., contractors accepted a contract including six-cent raises over each of the next three years; western Pennsylvania building tradesmen got a 10-cent boost, ironworkers at Scranton got 17½ cents and steamfitters in the same city got 10 cents; in Huntington, W. Va., plumbers got 7½ cents.

In the Midwest, Ohio crafts unions reported amicable settlements in many cities. A majority of 21 crafts in Toledo already had signed contracts at 10 cents an hour; Youngstown plumbers got 12½ cents; Columbus sheet metal workers got 10 cents; Dayton tradesmen accepted 10 cents. Plasterers and cement finishers at Fort Wayne, Ind., settled for 13 cents.

• **And further west**—Arizona's Consolidated Masonry and Plastering Contractors' Assn. at Phoenix called its negotiations "extremely friendly," and succeeding in holding bricklayers' pay at last year's $3.50 an hour. Plumbers got 20 cents an hour.

However, things weren't entirely rosy in Arizona. A strike of sheet metal workers was still crippling general construction work.

In Casper, Wyo., carpenters accepted a 10-cent raise; and carpenters in four San Francisco Bay area counties accepted a 10-cent boost—7½ cents an hour in pay and 2½ cents for health and welfare fringe benefits.

• **Carpenters' position**—Although the carpenters were at the apparent forefront of many of the wage disputes that led to settlements in the past several weeks, ENR's labor specialists hesitated to assign any prize to them as "bad boys" of construction labor. Most of the other 21 building trades were as heavily involved, when it came to wage troubles.

Where the carpenters have appeared most strongly in their bad-boy role has been in the matter of jurisdictional disputes—an example is a lengthy strike at construction on New York's huge Bellevue Hospital, where carpenters are fighting for installation of metal cabinets (against ironworkers).

Observers were inclined to blame the carpenters' troubles on two things: the attempt to protect the craft against increasing encroachment by substitute materials; and a jockeying for alignment of power within the union, pending a national officer election this fall. Maurice Hutcheson, president of the carpenters, more or less inherited his post on the death of his father "Big Bill" Hutcheson. The younger Hutcheson's position, thus, is apparently not strong enough in its own right to enforce close discipline on powerful local leaders, and won't be until after the election.

• **Trouble spots**—What trouble seemed to be brewing at the moment stemmed largely from jurisdictional troubles, as in New York City and Buffalo (where a carpenters' squabble with laborers threatened to spread to other trades).

Biggest apparent trouble spot seemed to be developing fast in Philadelphia, where the UMW's United Construction Workers began to move into the area in a direct challenge to AFL building trades. UCW scored its first victory in an organizing campaign near Pottstown, on a state highway construction project being carried out by the Central Pennsylvania Quarry, Stripping and Construction Co. Contractors—fearful that a real battle would upset what looks like a record construction year for the area—are watching developments closely.

Labor briefs

• **Investigation**—A five-member Senate Labor Subcommittee will "investigate promptly" any complaints of misuse of funds or other malpractices in employe and pension funds, according to New York's Senator Irving Ives. Said Ives: There are some 300,000 such funds, 35,000 in New York alone, with assets of $20 million to $30 billion.

• **Accidents down**—Accidents among employes of contractors working for the Corps of Engineers were at an all-time low during 1953, said the Army. Rate was 9.16 disabling injuries per million manhours; compared with 17.34 for construction as a whole.

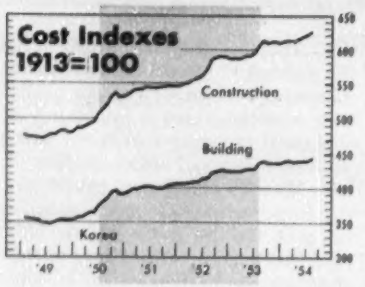
• **Not proper**—A Michigan Supreme Court has ruled that a union campaign to ban use of paint rollers isn't a proper labor objective, and okayed an injunction against painters' unions in four counties where the painters had demanded contracts banning use of rollers.

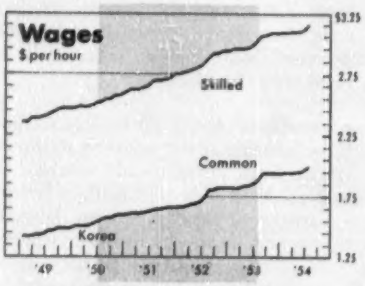
• **Union liable**—Kentucky's Court of Appeals has ruled that a union is liable for damages, if its illegal action forces an employer out of business. Case involved the New Burnside Veneer Co., of Burnside, Ky., which won $75,000 damages in the lower courts, against United Construction Workers.

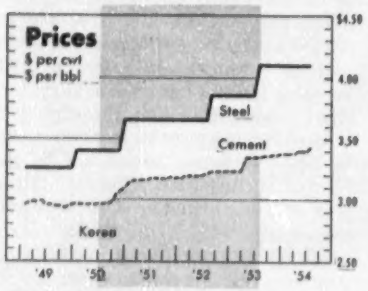
• **Business plea**—Niagara Falls, Ont., city councilmen have before them a brief, presented by the city's Building and Construction Trades Council, asking the city to hire only contractors with union employes to do city work.

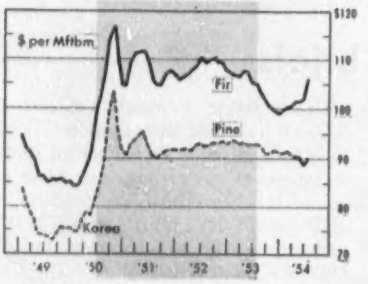
• **Seeks injunction**—NLRB has asked an injunction in Spokane Federal District Court to prevent repeated strikes at the Hanford Plutonium Works construction project. Action was filed against the Pasco-Kennewick Building and Construction Trades Council, and 21 building trades locals. The unions' actions have stemmed from employment of a non-union contractor.

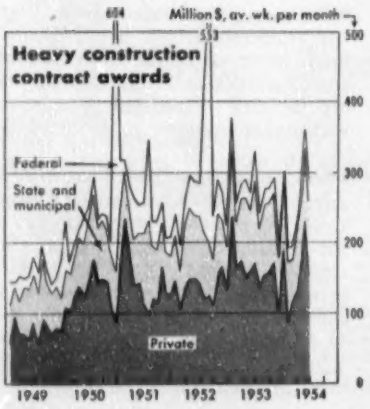
JULY CONSTRUCTION SCOREBOARD











ENR INDEXES (1913 = 100), 20-cities' average	1954 July	% Change from last Month	% Change from last Year
Construction Cost	628.08	+1.0	+3.9
Building Cost	443.87	+0.9	+2.0
WAGE RATES, 20-cities' average			
Common	$1.997*	+1.0	+6.2
Skilled (aver. 3 trades)	3.147	+0.4	+4.2
Bricklayers	3.428	+0.4	+3.3
Structural Ironworkers	3.109	+0.3	+4.9
Carpenters	2.905	+0.7	+4.6
* June Revised 1.979			
MATERIAL PRICES, 20-cities' average			
Cement, bulk, per bbl	$3.427	+1.7	+3.0
Structural Steel, (3-mill aver.), per cwt	4.100	0.0	0.0
Sand, per ton	2.232	0.0	+2.7
Lumber, 2x4 Fir, per M. ft. bm	106.167	+3.5	+1.2
Lumber, 2x4 Pine, per M. ft. bm	90.050	+1.0	−3.0
Common brick, per M	33.237	+0.3	+1.7
Ready-mixed concrete, per c. y	12.086	+0.4	+1.9
Structural Clay Tile, 3x12x12 per M	161.644	+0.7	+1.8

CONTRACTS AWARDED (Millions)	1954 June	1954 6-Mos. (25-Weeks)*	% Change from '53 June	% Change from '53 6-Mos. (26-Weeks)*
Total U. S. (ENR reported)	$1,160.8	$6,503.7	− 11.9	− 14.5
Private	599.3	3,730.8	− 11.5	− 15.4
Public	561.5	2,772.9	− 12.4	− 13.2
Federal	136.4	549.4	− 17.3	− 29.0
ENR Volume Index, '13 = 100	510	464	− 10.8	− 13.7
NEW CAPITAL (Millions)				
Total	1,004.2	4,764.7	+ 48.2	+ 10.2
State & Municipal Bond Sales	701.4	3,062.7	+108.9	+ 39.7
Corporate Security Sales	289.5	1,522.9	− 13.5	− 26.6
Federal (non-federal work)	13.3	118.5	+ 81.2	+116.0
Federal (federal work)	.....	60.6	.....	.....
* Computed on weekly average				

MATERIAL SHIPMENTS & LABOR SUPPLIES (millions)	1954 April (A) May (M)	4-Mos. (4) 5-Mos. (5)	% Change from '53 Mo.	% Change from '53 Yr.-Cum.
Cement, bbls, Bu. of Mines	23.567(A)	68.652(4)	+12.8	− 1.0
Fabr. Struc. Steel, tons AISC	.254(M)	1.332(5)	− 3.8	+ 3.6
Lumber, mil. ft. bm., NLMA	3.387(A)	12.152(4)	− 6.7	− 7.8
Lumber Prod., mil. ft. bm., NLMA	3.310(A)	12.318(4)	− 5.7	− 3.7
Contract Const. Employ., BLS	2.613(M)	2.454(5)†	+ 0.2	+ 0.2
† Average				

ENR INDEX REVIEW

	Construction Cost 1913=100	Construction Cost 1949=100	Building Cost 1913=100	Building Cost 1949=100	Volume 1913=100	Volume 1949=100
1953						
July	604.64*	126.75*	435.15*	123.69*	447	129
Aug	612.55*	128.41*	436.86*	124.18*	487	141
Sept	610.85*	128.05*	435.98*	123.93*	487	141
Oct	611.64*	128.22*	436.19*	123.99*	528	153
Nov	611.80*	128.25*	436.22*	124.00*	354	102
Dec	611.30*	128.14*	435.72*	123.86*	547	158
Annual Aver.	**599.99***	**125.78***	**430.84***	**122.47***	**506**	**146**
1954						
Jan	613.86*	128.68*	436.70*	124.14*	338	98
Feb	614.53*	128.82*	437.32*	124.31*	345	100
Mar	613.81*	128.67*	436.99*	124.22*	426	123
Apr	615.18*	128.96*	437.76*	124.44*	517	149
May	618.51*	129.66*	438.51*	124.65*	648	187
June	621.51*	130.29*	439.94*	125.06*	510	147
July	628.08	131.67	443.87	126.17	...	...
*Revised						

Private work is off in June; public work keeps improving

Dollar volume of contracts reported to ENR slowed down in June from the record-breaking pace of recent months. But it was still the second best June on record. Total awards were $1,161 million, down about 19% from May and 14% below June of last year. The decline was entirely due to lower volume of private contracts. Public work, on the other hand, racked up the biggest total for any month so far this year.

Private awards were off 35% from May and 12% below June 1953. However, on the basis of average weekly volume, it was the second biggest June on record for private contracts.

• **Housing and industrial drop**—A substantial decline in mass housing and in industrial building was responsible for most of the falling-off in private work. Mass housing contracts totaled about $319 million, compared with $503 million in May. Industrial contracts were $143 million, a little more than half the May figure.

Commercial building, which along with mass housing has been a mainstay of the revival in awards during the past few months, also was slightly lower in June. Volume was $107 million, compared with $121 million in May. However, this was the best June on record for commercial awards.

So far this year, mass housing and commercial building are the only categories of private work that are ahead of the same 1953 period. On the basis of the weekly average, mass housing is 5% ahead of last year and commercial building is 17% ahead (see also p. 21). The biggest decline is in unclassified work (mainly pipelines), which is down 71%.

• **Public works**—While private awards tapered off, public contracts improved. Average weekly awards of both federal work and state and municipal contracts were the best for any month so far this year. However, federal volume was still 15% below June 1953, and state and municipal was off 11%.

The brightest spot in public works was nonresidential building—where schools are an important factor. Volume here rose for the second consecutive month, and was the best so far this year. Awards in this category were also higher than in June 1953.

Highways dropped 5% below the May level and were down 23% from a year ago. While bridge contracts rose sharply in June from the low volume in May, they were well under volume in June 1953. Sewerage awards were off from May's high level, but were above June 1953. Waterworks was off sharply, and there was a dip in earthwork and waterways.

So far this year, every type of public work is below 1953 except for the unclassified category, which moved up substantially in June with a volume of $100 million, about 25% above May.

Cost indexes again push to new highs in July

Lumber strikes in the Northwest are responsible for boosts in lumber prices in a number of U. S. cities. On top of that come cement price increases in seven cities, and scattered wage hikes in five cities. The result: ENR's cost indexes have reached new highs.

The July Construction Cost Index is 628.08, based on 1913 = 100. This is 1.0% above June and 3.9% above July 1953. The Building Cost Index is 443.87, also based on 1913 = 100. This is 0.9% above June and 2.0% above a year ago. The increased costs this month do not include higher structural steel prices which are expected to go into effect early this month.

ENGINEERING CONSTRUCTION CONTRACTS—JUNE 1954

ENGINEERING NEWS-RECORD *reports continental U. S. Construction projects of the following minimum costs—Waterworks, excavation, drainage and irrigation, $34,000; other public works, $60,000; industrial buildings, $82,000; other buildings, $300,000*

Four Weeks—Thousands of Dollars (000 Omitted)

	June, 1954							U. S. Cumulative Six Months		% Change	Canada
	New England	Middle Atlantic	South	Mid-West	West of Mississippi	Far West	Total U. S.	1954 (25 weeks)	1953 (26 weeks)	'53 to '54 Av. Wk.	June 1954
Public Works											
Waterworks	224	1,100	2,103	1,644	5,990	2,928	**13,989**	**111,403**	126,837	− 8	2,750
Sewerage	802	8,879	6,148	7,672	8,251	3,322	**35,074**	**186,626**	196,953	− 1	2,787
Bridges	3,627	10,750	6,989	11,106	5,215	2,537	**40,284**	**187,154**	307,471*	−37	1,111
Earthwork and drainage	49	1,334	6,916	387	3,716	8,640	**21,042**	**134,244**	215,843	−35	1,076
Streets and roads	4,875	21,131	36,364	25,692	42,811	29,008	**159,881**	**810,688**	888,552	− 5	14,576
Public buildings, residential	.....	5,923	2,340	2,844	6,403	3,048	**20,558**	**94,200**	267,913	−65	2,582
Other public buildings	10,816	48,010	26,321	25,752	28,714	30,818	**170,431**	**828,559**	879,305	− 2	30,182
Unclassified	12,781	14,391	22,772	13,220	22,706	14,368	**100,238**	**420,008**	436,329	+0.1	6,018
Total public	**33,174**	**111,518**	**109,953**	**88,377**	**123,806**	**94,669**	**561,497**	**2,772,882**	**3,319,203***	**−13**	**61,082**
Federal government (included in above classifications)	11,732	22,752	28,473	12,874	33,602	26,948	**136,381**	**549,359**	807,016	−29	19,573
Private											
Bridges	.....	.....	.....	.....	.....	60	**60**	**2,850**	7,052	−58	.....
Industrial buildings	6,208	13,717	23,902	26,199	58,310	14,228	**142,573**	**919,625**	1,403,943	−35	29,701
Mass housing	7,450	111,184	16,937	84,549	61,475	36,917	**318,512**	**2,049,449**	2,039,324	+ 5	63,811
Commercial buildings	15,898	23,344	15,620	21,337	25,407	5,496	**107,102**	**610,938**	544,088	+17	17,475
Unclassified	110	.....	6,057	403	22,522	1,917	**31,009**	**147,950**	531,118	−71	2,107
Total private	**29,666**	**148,245**	**62,516**	**132,488**	**167,723**	**58,618**	**599,256**	**3,730,812**	**4,586,425**	**−15**	**113,094**
Total Engineering Construction:											
June, 1954 — 4 weeks	**62,840**	**259,763**	**172,469**	**220,865**	**291,529**	**153,287**	**1,160,753**	.....	.....	....	**174,176**
May, 1954 — 4 weeks	73,325	344,933	118,942	379,797	322,815	197,130	**1,436,942**	.....	.....	....	102,544
June, 1953 — 4 weeks	35,269	316,873	326,745	171,524	280,792	186,867	**1,318,070**	.....	.....	....	65,661
Six Months — 1954	**373,145**	**1,682,059**	**851,936**	**1,464,114**	**1,406,407**	**726,933**	.....	**6,503,694**	.....	**−14**	**612,291**
Six Months — 1953	357,334	1,740,205	1,493,111	1,710,730*	1,656,258	947,990	.....	.....	7,905,628*	....	539,362
% Change '53 to '54 (Av. Wk.)	+9	+0.5	−41	−11	−12	−20	.....	.....	.....	....	+18

* Revised

Cutting your insurance costs

Here are some of the ways a contractor can cut his premiums without sacrificing essential coverage

Harold W. Earley
Wilkinson-Todd Insurance Service, Inc.
Cleveland, Ohio

For a contractor, insurance premiums are a sizable cost item. This expense often can be cut without sacrificing needed protection, if there is complete cooperation between the contractor, his accountant, and his insurance agent.

• Public liability insurance coverage

Let's look first at public liability insurance. The premium that the insurance company charges is based on payroll, and the rates vary widely, depending on what sort of activity the contractor's employes are engaged in at the time. The rate per $100 of payroll ranges from a fraction of a cent for clerical employes to two or three dollars for employes engaged in building wrecking.

Most contractors are permitted to divide their total payroll and allocate the proper amounts to the various job classifications. If you fail to keep your records in sufficient detail so this allocation can be made properly, the insurance company's payroll auditor is obliged to put your entire payroll into the highest rated type of work in which you are engaged. Obviously, every dollar of payroll properly allocated to the lower, rather than the higher, rates classifications will cut insurance costs.

Some employes should be excluded in figuring public liability premiums. Drivers of automobiles and horse-drawn vehicles, and aircraft pilots are excluded because they are covered under separate liability policies. However, payroll of drivers' helpers, garagemen, stablemen and so on are included in figuring public liability.

A few contractors, mostly those engaged in the more hazardous types of work, are not allowed to divide their payroll into classifications. Their entire payroll is charged to the principal classification.

• **Overtime**—Overtime pay should not increase the relative cost of insurance, if proper records are kept. The insurance companies assume that, even though a man working nine hours has more time to cause an accident than a man working eight hours, he is no more likely to cause an accident in the ninth than in the eighth hour. So the underwriters provide for overtime in this way:

(A) If the contractor's records are maintained to show separately, by employe and by class of work, (1) the wages earned at regular rates of pay for total hours worked, and (2) the extra wages earned for overtime, the extra wages will be excluded in computing the final premium.

(B) If the contractor's records show only (1) the wages earned by an employe for hours worked at regular rates of pay and (2) the total wages earned at premium overtime rates, one-third of the total wages earned for overtime shall be excluded from premium computation.

(C) If the contractor's records show only the total wages earned by an employe, the total wages shall be included in the computation.

Obviously the method outlined in (A) is preferable if any of the overtime wages are earned at double time rather than at time and one-half. Method (B) is not advisable if there is any double time and method (C) is not advisable if there are any wages paid at the overtime rate.

Many employes in the construction industry earn more than $100 per week, even if each hour is worked at regular rates of pay. After your payroll has been adjusted for overtime in accordance with (A) or (B) above, it may be adjusted further by excluding average wages in excess of $100 per week for each employe whose individual average is found to be in excess of $100.

• **Experience credits**—The published (standard) rates for each territory and for each classification are average rates. If your operation is large enough to develop sufficient premium, it will be experience rated. If your losses have been less than average, you will get a credit against your premium. However, experience rating is a two-way street. If your losses were more than average, you will have a debit added to your premium. The amount of this credit or debit will depend on three factors:

(1) The percentage of your previous premiums which were needed to pay losses.

(2) The premium which your operations will develop at standard rates.

(3) The experience rating formula filed with your state insurance department by your insurance company.

The credit which is allowed for any given ratio of losses to premium depends on the total premium. A 10% loss ratio on a $20,000 premium will receive a greater credit than a 10% loss ratio on a $10,000 premium. This is not discriminatory—it is simply a recognition that the large risk, having more units of exposure, will develop an experience which more nearly approaches 100% credibility.

The second phase of experience rating has special significance for the contractor. Liability policies are subject to audit, and the final premium is developed by applying the rates shown in the policy to the actual annual payroll. Some contractors believe that by making low estimates of payroll in determining the initial premium, they can operate on the insurance company's money until the audit has been made. To a certain extent this is possible. However, your experience credit depends on your previous loss ratio applied by formula to your estimated current premium. By estimating your payroll at a low figure, inevitably you will get less credit or more debit than you would receive if the payroll is estimated at the higher, more nearly correct, amount.

• **Mutual vs stock insurance**—It is not intended to discuss here the relative merits of either type of company. But, since we are discussing costs, a look at the arithmetic is appropriate. Your final cost is the manual premium less experience credits (or plus experience debits), less other discounts, less any dividend paid by an insurance company. Obviously the importance of any one of these discounts depends on the effect of the other factors.

The manual premium generally will be the same if the same estimated payroll is used. In the previous paragraphs your attention was called to differences in the experience rating formulae. Two more factors may reduce your initial premium. They are (1) deviations from the manual rates and (2) schedule rating discounts.

Some insurance companies, both stock and mutual, in addition to the experience rating formula, have also filed deviations from the published manual rates. In other words, their

experience of lower losses enables them to charge lower rates.

Schedule rating is also used to recognize that two risks in the same classification may have the same experience solely because of good fortune. The physical or management characteristics of the two may differ to the extent that one is potentially a much better risk than the other.

The following table will show that you cannot place absolute reliance on a saving resulting from the statement of one company which says, "We discount the rates 10%," or by another which says, "We have always returned a dividend of 15% to our policyholders."

It is apparent that the advantage is not 10% as claimed by the deviator, nor is it 15% as claimed by the mutual.

	Stock Company	Deviating Company	Mutual Company
Initial manual premium	$10,000	$10,000	$10,000
Deviation from manual	none	(10%) 1,000	none
Net after deviation	**$10,000**	**$ 9,000**	**$10,000**
Experience credits (varying)	2,500	2,000	1,500
Net after experience credits	**$ 7,500**	**$ 7,000**	**$ 8,500**
Schedule discounts (varying)	750	350	680
Net after schedule discounts	**$ 6,750**	**$ 6,650**	**$ 7,820**
Dividends	none	none	(15%) 1,173
Net Cost	**$ 6,750**	**$ 6,650**	**$ 6,647**

• Workmen's compensation insurance

Most of the suggestions made concerning public liability insurance also will apply to workmen's compensation. However, there are a few differences.

• **Classification**—In workmen's compensation, as with public liability, you are generally permitted to divide the payroll and allocate it to the several proper classifications. However, since compensation covers all employes, (with a few relatively unimportant exceptions), you cannot exclude the wages of drivers, chauffeurs and aircraft pilots.

• **Employes of sub-contractors**—With respect to the liability coverage, it is important to note that the employes of a sub-contractor can involve you in a liability claim. The best protection is to ask the subs to furnish you with certificates of their liability coverage and you will probably also need "Independent Contractor's" coverage.

There is little you can do to reduce the cost of independent contractor's coverage. If you fail to obtain a certificate of liability insurance from the sub-contractor, you may be faced with a claim which you will have to defend but may be able to avoid depending on the degree of control and direction you were exercising over the sub at the time of the accident.

But, with respect to workmen's compensation, it is a different matter. The state compensation acts hold the principal responsible for seeing that the employes of sub-contractors are covered by workmen's compensation. If you fail to obtain a certificate of compensation insurance from the sub-contractor, you will be charged the compensation premium developed by applying the appropriate rate to the amount of work sublet by you to the sub. This can amount to a sizable expense and can be avoided by obtaining the necessary certificate from the sub-contractor.

• **Experience credits** – Workmen's compensation rates and experience credits are controlled in most states either by the state or by an organization designated by the state. One insurance company cannot gain an advantage over another by filing a different formula for determining experience credits.

• **Advance premium discounts**—These are peculiar to workmen's compensation and are not generally used in developing the premium for public liability insurance. Advance premium discounts are given according to a set scale depending on the amount of advance premium. They are not the same for stock and mutual companies and they also vary by states. The following is typical of a state in which 60% of the premium is allowed for losses:

Advance Premium		Stock	Non-Stock
First	$ 1,000	No Disc.	No Disc.
Next	4,000	10.7%	5%
Next	95,000	15.7%	8%
Over	100,000	17.3%	8%

• **Retrospective rating**—The advantages and disadvantages of retrospective rating could well be the subject of a rather sizable article. Only a few of the more pertinent facts will be included here.

Retrospective rating may be used separately on general liability, automobile liability or workmen's compensation. The first two may be combined, or all three may be combined. The following comments will be limited to workmen's compensation, the line more frequently rated retrospectively.

The basic formula underlying retrospective rating is calculated so that for any risk which develops the accepted or average loss ratio, the retrospective premium will be the same as the experience rated premium, less advance premium discounts. It follows that unless your experience is substantially better than average, you will gain no great advantage from retrospective rating. The principal difference lies in the fact that under retrospective rating you get the advantage sooner than is the case under experience rating, which normally has a lag of from two to three years before your experience is reflected in your rate.

Manufacturers may determine the selling price of the product after the work has been performed. But a contractor, unless working on a cost-plus basis, must determine the price of his product before the work is done. Since the final cost of insurance under retrospective rating is not known until several months after the work is done, the contractor is handicapped in estimating the insurance cost to be included in his bid.

• Losses

From the several previous references to the effect of losses on your premium, it is obvious that the prevention of losses will reduce your insurance costs. All of the better insurance companies employ competent loss prevention engineers. Seek their help, advice and co-operation in preventing and reducing your losses and you will thereby be able to reduce your insurance costs.

It is axiomatic in the insurance business that the longer a loss is unpaid, the larger it will become when paid. The prompt and proper reporting of all claims will enable the insurance company to pay each claim at the lowest fair cost. This will reduce your total losses and in the long run reduce your insurance costs. Your insurance agent and the insurance companies he represents will be glad to assist you in setting up a most efficient system for reporting any loss you may have.

(B&F continued on page 132)

Thompson-Starrett plans to merge with Chicago firm

Thompson-Starrett Co., Inc., New York contracting firm, plans to merge with Roberts & Schaeffer Co., of Chicago, through an exchange of stock. Roberts & Schaefer specializes in engineering and construction for the coal, iron ore mining, and steel industries.

Under the merger plan, R & S executives would predominate in the new management setup. John E. Kalinka, now board chairman of R & S, would become Thompson-Starrett's president and chief executive officer. Robert E. Sloan, executive vice-president of R & S, would become board chairman. J. R. Van Raalte, now president of T-S, would become chairman of the executive committee.

Some months ago, Van Raalte said that Thompson-Starrett was considering a merger with some other firm, to take advantage of a $1.1-million tax loss which could be carried forward into future tax years and offset against taxable income. Under such circumstances, at this, a minus factor becomes a plus.

Thompson-Starrett's latest report, for the nine months ended Jan. 31, shows a loss of about $498,000, compared with a profit of $218,000 in the same period of the previous year.

Business briefs . . .

• **Office vacancies** in Manhattan have increased slightly in the past year, reports the Real Estate Board of New York. The vacancy ratio is now 1.7%, compared with the figure of 0.9% a year ago.

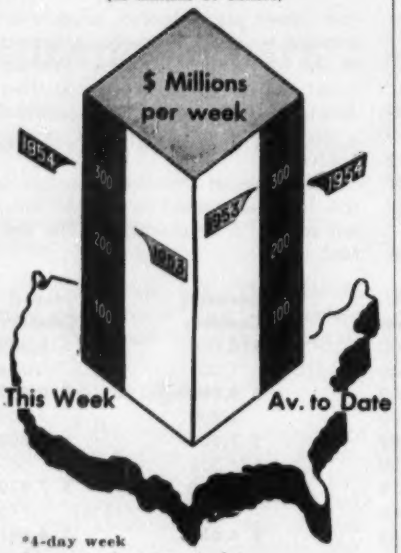
• **San Francisco's** $12.6-million sewer bond issue, apparently defeated at the polls a month ago, has been OK'd after all. It turns out that absentee ballots brought in the few extra votes necessary for a two-thirds majority. Money will be spend to complete outfall sewers, thus ending the practice of dumping raw sewage into San Francisco Bay.

• **Big paper mill** is planned at Edson, Alberta Province, by St. Regis Paper Co. of New York, and North Canadian Oils, Ltd., of Calgary. The mill would produce 300 tons daily of bleached sulphate kraft pulp.

• **New mortgage exchange** has opened in Los Angeles, to be known as the Trust Deed & Mortgage Exchange. Other exchanges are scheduled to open in other U. S. cities.

Activity This Week

As reported to ENR
(In millions of dollars)



*4-day week

Amount of contracts let

	This Week*	Cumulative 27 wks 1954	1953	% chge
Federal	$59.2	$645.7	$837.6	−23
State and municipal	112.3	2,449.3	2,602.2	−6
Total pub.	171.5	3,095.0	3,439.8	−10
Total priv.	127.0	4,031.0	4,722.1	−15
U. S. total	**$298.5**	**$7,126.0**	**$8,161.9**	**−13**
Contracts by type of work				
Waterworks	$3.7	$119.6	$129.3	−8
Sewerage	10.5	204.4	202.0	+1
Bridges	37.2	231.5	332.2	−30
Highways	37.2	896.3	925.0	−3
Earthwork, waterways	8.5	153.3	223.2	−31
Buildings:				
Public, excl. hsg.	42.1	910.8	907.8	+0.3
Housg., pub.	6.9	120.1	272.6	−56
Housg., priv.	65.9	2,192.4	2,110.8	+4
Commercial	26.7	664.7	571.0	+16
Industrial	29.4	978.8	1,490.3	−34
Unclassified	30.4	654.1	997.7	−34
Total	**$298.5**	**$7,126.0**	**$8,161.9**	**−13**

*4-day week

New capital for construction

(millions of dollars)

	Week of July 1 1954	Cumulative 26 Wks 1954	1953-54 % chge
Corporate securities	$91.7	$1,614.7	−25
State and municipal:			
Excluding housing	80.9	3,100.7	+50
Housing	7.2	50.1	−76
Federal loans	4.8	68.3	+17
Federal aid	...	55.0	...
Total non-federal	**$184.6**	**$4,888.7**	**+9**
Federal approps.:			
In U. S.	...	56.0	...
Outside U. S.	...	4.6	...
Total new capital	**$184.6**	**$4,949.3**	**+10**

NOTE: Minimum size projects included are: Waterworks and waterway projects, $34,000; other public works, $60,000; industrial buildings, $82,000; other buildings, $300,000.

ENR indexes		Base years = 100 1913	1926	1949
Constr cost	July '54	628.08	301.92	131.67
	June '54	621.51*	298.76*	130.29*
Bldg. cost	July '54	443.87	239.94	126.17
	June '54	439.94*	237.82*	125.06*
Volume	June '54	510	207	147
	May '54	752	648	187

*Revised

OFFICIAL PROPOSALS

Bids: July 29, 1954

Sanitary Sewer Improvements

Sealed proposals for the furnishing of all labor, materials, equipment and service for the construction of certain sanitary sewer improvements and additions for the City of Henderson, Kentucky, will be received by the City of Henderson until 10:00 AM, CST, Thursday, July 29, 1954, at the City Hall in Henderson, Kentucky, at which time they will be publicly opened and read aloud.

The improvements and additions advertised herewith constitute a portion of an overall program of water and sewer improvements, and are as follows:

Contract V —A 7.2 MGD primary type sewage treatment plant and river pumping station.

Contract VI—Ohio River interceptor consisting of one small pumping station, together with approximately 1600 linear feet of 6 inch cast iron pipe force main, more than one mile of 8 inch to 15 inch gravity sewers, approximately 4000 feet of 24 inch cast iron force main, and approximately two miles of 30 inch to 36 inch gravity sewers.

Plans, specifications and contract documents covering the proposed work may be examined on or about June 28, 1954, at the following places:

City Hall, Henderson, Kentucky.
J. Stephen Watkins, Consulting Engineers, 251 East High Street, Lexington, Kentucky.
J. Stephen Watkins and Robert E. Martin, Consulting Engineers, 901 Hoffman Building, Louisville, Kentucky.
F. W. Dodge Corporation, 1523 Demonbreun Street, Nashville, Tennessee.
F. W. Dodge Corporation, 912 Chemical Building, St. Louis, Missouri.
F. W. Dodge Corporation, 840 Barret Avenue, Louisville, Kentucky.
Builders Exchange, 120 East Brandeis, Louisville, Kentucky.
Building Witness, 626 Broadway, Cincinnati, Ohio.
F. W. Dodge Corporation, 424 Architects & Builders Bldg., Indianapolis, Indiana.
Dodge-Builders Exchange, 166 Monroe Avenue, Memphis, Tennessee.
Associated General Contractors, 2303 Elmwood at Beltline, Paducah, Kentucky

or may be obtained from J. Stephen Watkins and Robert E. Martin, Consulting Engineers, 251 East High Street, Lexington, Kentucky, upon receipt of a deposit of thirty-five ($35.00) dollars. The deposits of contractors making legal bids will be returned upon receipt of plans and documents within ten (10) days after bids are opened. All other deposits will be returned with deductions not exceeding actual cost of reproduction and handling of documents, upon return of documents in good condition within ten (10) days after bids are opened.

Liquidated damages in the amounts set out in the specifications and contract documents will be assessed for failure to complete the work within the contract completion times specified therein.

No bidder may withdraw his bid for a period of thirty (30) days after the scheduled closing time for the receipt of bids. Bids shall be accompanied by a certified check or bid bond in an amount equal to five (5%) per cent of the bid to insure the execution of the contract for which such bid is made. In case the bid is not accepted, the check or bid bond will be returned to the bidder, but if the bid is accepted and the bidder shall refuse or neglect to enter into a contract with the City of Henderson, Kentucky, within ten (10) days from the time he shall be notified of the acceptance of his bid, the said check or bid bond shall be forfeited to the City of Henderson, Kentucky, as liquidated damages for the failure to do so.

The successful bidder will be required to furnish an acceptable performance bond in the amount of one hundred (100%) per cent of the contract price.

The City of Henderson, Kentucky reserves the right to reject any and all bids, to waive informalities, and to negotiate with the apparent qualified best bidder or bidders to such extent as may be necessary.

CITY OF HENDERSON, KENTUCKY
ATTEST By: Hecht Lackey
Mayor

Phil J. Thomy
City Clerk

OFFICIAL PROPOSALS

RATE: The rate for Official Proposal advertising is $1.80 per line or fraction set solid. Where the advertisement is set other than solid, the space is measured by total space occupied and charged on basis of 12 lines to the inch.

CLOSING DATE: Friday 10:30 A.M. for issue dated the following Thursday.

SEND COPY TO: Official Proposal Division, Engineering News-Record, 330 West 42nd Street, New York 36, N. Y.

Bids: July 13, 1954

Contract 441

CLEARING AND GRUBBING
PEPACTON RESERVOIR

SEALED BIDS will be received by the Board of Water Supply, at its offices, thirteenth floor, 120 Wall Street, New York City, until 10:00 A.M., Eastern Standard Time, on Tuesday, July 13, 1954, for Contract 441, for clearing and grubbing the easterly portion of the Pepacton reservoir and performing related work, in the Towns of Middletown, Andes and Colchester, Delaware county, New York. The work will comprise the clearing of approximately 700 acres, the grubbing of about 580 acres, required excavation and removal of excrementitious material and, to the extent specified, the collection and disposal of debris carried or deposited by the streams from the entire reservoir area and the cleaning of certain wooded and adjacent areas upstream of the reservoir, all as set forth in the specifications.

No bid will be received and deposited unless accompanied by a certified check upon a National or State bank, drawn and made payable to the order of the Comptroller of The City of New York, in the amount of thirty thousand dollars ($30,000.00) for the proper execution of the contract.

At the above place and time the bids will be publicly opened and read. Pamphlets containing information for bidders, forms of bid and contract, specifications, contract drawings, requirements as to surety, etc., can be obtained in Room 1316 at the above address, upon application in person or by mail, by depositing the sum of five dollars ($5.00) in cash or its equivalent for each pamphlet. Within 30 days following the award of contract or rejection of bids, the full amount of such deposit will be refunded for each pamphlet submitted as a bid and a refund of four dollars ($4.00) will be made for each other pamphlet returned in acceptable condition. For further particulars, apply at the office of the Chief Engineer at the above address.

IRVING V. A. HUIE, President, EDWARD C. MAGUIRE, HERBERT M. ROSENBERG, Commissioners, Board of Water Supply; BETTY COHEN, Acting Secretary.

Bids: July 22, 1954

Soil Explorations and Foundation Investigations

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of Highway Law, sealed proposals will be received until 10:30 A.M., Eastern Daylight Saving Time, on July 22, 1954 by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y. for

SOIL EXPLORATIONS AND FOUNDATION INVESTIGATIONS AT VARIOUS SITES ON THE BROOKLYN QUEENS EXPRESSWAY, PARK AVENUE VIADUCT, NASSAU STREET TO FLUSHING AVENUE, KINGS COUNTY, WHICH CONSTITUTES CONTRACT NO. SPEC. SM-69

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany 1, New York

(b) Mr. M. E. Goul, District Engineer, Montauk Highway at Little East Neck Road, Babylon, Long Island, New York

(c) Mr. Charles Schaefer, Department of Public Works, 270 Broadway, New York City.

The deposit for a set of plans, specifications and proposal forms is $5.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

The Engineer's estimate of cost for this work is $57,000.00.

Proposal for this contract must be submitted in a separate sealed envelope with the name of the contract plainly endorsed on the outside of the envelope. Proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum of $2850.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instruction to Bidders".

The right is reserved to reject any or all bids.

B. D. Tallamy
SUPERINTENDENT OF PUBLIC WORKS

Bids: July 20, 1954

Test Borings

CONTRACT 450

SEALED BIDS will be received by the Board of Water Supply, at its offices, thirteenth floor, 120 Wall Street, New York City, until 10:00 A.M., Eastern Standard Time, on Tues, July 20, 1954, for Contract 450, for making test borings in the Towns of Deposit, Tompkins, Hancock and Colchester, Delaware county, Rockland and Neversink, Sullivan county, and Wawarsing, Ulster county, New York, all as set forth in the specifications. The borings, in general, will be made on land at such places as may be directed in the vicinity of the proposed site for the dam of the Cannonsville reservoir, along the proposed tunnel from that reservoir to the existing Rondout reservoir and along the proposed bypass tunnel at Rondout reservoir. The borings in the vicinity of the Cannonsville reservoir will vary in depth from less than 50 to about 250 feet. Along the proposed tunnels the borings to determine the elevation of bed rock will vary from about 30 to 250 feet in depth and those to determine the nature and condition of the bed rock from about 200 to 900 feet.

No bid will be received and deposited unless accompanied by a certified check upon a National or State bank, drawn and made payable to the order of the Comptroller of the City of New York, in the amount of ten thousand dollars ($10,000.00) for the proper execution of the contract.

At the above place and time the bids will be publicly opened and read. Pamphlets containing information for bidders, forms of bid and contract, specifications, contract drawing, requirements as to surety, etc., can be obtained in Room 1316 at the above address, upon application in person or by mail by depositing the sum of five dollars ($5.00) in cash or its equivalent for each pamphlet. Within 30 days following the award of contract or rejection of bids, the full amount of such deposit will be refunded for each pamphlet submitted as a bid and a refund of four dollars ($4.00) will be made for each other pamphlet returned in acceptable condition. For further particulars, apply at the office of the Chief Engineer at the above address.

IRVING V. A. HUIE, President, EDWARD C. MAGUIRE, HERBERT M. ROSENBERG, Commissioners, Board of Water Supply; BETTY COHEN, Acting Secretary.

Bids: July 28, 1954

Water Treatment Plant

NOTICE TO BIDDERS

Notice is hereby given that pursuant to a resolution of the Town Board of the Town of Tonawanda, Erie County, New York, sealed proposals will be received and considered by said Town Board on the 28th day of July, 1954, at 1:00 o'clock P. M., Eastern Daylight Saving Time, in the Council Room of the Municipal Building, Kenmore, New York, for furnishing all material, equipment, and together with all labor for the construction of a 16 M. G. D. capacity Water Treatment Plant complete with all equipment, piping, electrical work, heating, plumbing, outside piping, and other appurtenant work, in accordance with the contract documents therefor, including plans, specifications, instructions to bidders, etc., prepared by Nussbaumer, Clarke & Velzy, Consulting Engineers for the Town of Tonawanda, New York, and approved by the Town Board of said Town, all of which are on file with the Town Clerk, at his office in the Municipal Building, Kenmore 17, New York, where the same may be examined during the usual business hours.

Copies of the proposed contract documents, plans, specifications, and instructions to bidders, may also be examined and secured at the office of Nussbaumer, Clarke & Velzy, Consulting Engineers, 327 Franklin Street, Buffalo 2, New York. One copy of said proposed documents may be obtained upon payment of $75.00. Any bidder, upon returning said plans and contract documents in good condition, within twenty (20) days following the taking of bids, will be refunded the full amount of his deposit; non-bidders will similarly be refunded only one-half the deposit.

The Town Board of the Town of Tonawanda, New York, reserves the right to reject any or all bids, or to waive any informalities, or to make an award to other than the low bidder.

Each proposal must be accompanied by a certified check for a sum equal to five per centum (5%) of the estimated expense of the total improvements, payable to the order of the Supervisor, or a bond with sufficient sureties, to be approved by the Supervisor, or a penal sum equal to five per centum (5%) of the estimated expense of the improvement, conditioned that, if his proposal is accepted, he will enter into a contract for the same, and that he will execute such further security as may be required for the faithful performance of the contract.

No bidder may withdraw his bid within sixty (60) days after the date set for the opening thereof, but may withdraw same at any time prior to the scheduled time for the opening of bids.

ROBERT JOHNSON
Town Clerk
Town of Tonawanda, New York
Dated: June 21, 1954
Published: July 1, 1954

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4199) will be received at Superior, Nebraska, until July 29, 1954, for furnishing labor and materials for Courtland Canal, Sta. 1581/00 to 1740/30 laterals, sublaterals, and drains, Bostwick Division, Missouri River Basin Project. Location: near Webber, Kansas. Principal items are: earthwork and misc. structures for 3 miles of Courtland Canal and earthwork and structures for 13 miles of laterals and sublaterals. Completion time 480 days. For particulars, address Bureau of Reclamation, Superior, Neb.; or Building 53, Denver Federal Center, Denver, Colo. W. A. Dexheimer, Commissioner.

OFFICIAL PROPOSALS

Bids: July 22, 1954

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.,—Pursuant to the provisions of the Highway Law, and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time, on the 22nd day of July 1954, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 1 N. F. Ronan Acting District Engineer 333 Broadway Albany N. Y.						
Schenectady	R.C. 54-85	Scotia Village: Balston Avenue S. H. 5496	0.58	Asp. Conc. Opt.	$2,400 Plans $10	$44,000
Washington	R.C. 54-81	Various Highways (Tree Removal)	....	Removal of 166 Trees	$800 Plans $10	16,000
DISTRICT No. 2 L. Ketchum District Engineer, 109 No. Genesee Street, Utica, N. Y.						
Oneida	FARC 54-83	Verona-Rome, S. H. 5521	(6.14)	9" Cem. Conc. Pavt. 24'-30' Wide = 5.02 Mi.	$110,000	1,990,000
		Rome Roads, Augusta & Westmoreland Sects, S. H. 564	(Hwy.) (0.64)	Asp. Conc. Opt.= 0.31 Mi. F.C.R.O.B. Grav.= 0.55 Mi.	Plans $25	
		Proj. F-U-156(2)	(Acc.)			
DISTRICT No. 3, William Robinson, District Engineer, Weigh Lock Building, Syracuse, N. Y.						
Onondaga	R.C. 54-78	Various Highways (Tree Removal)	....	Removal of 122 Trees	$600 No Plans	11,000
DISTRICT No. 4 E. G. H. Youngmann, District Engineer, Barge Canal Terminal, Rochester, N. Y.						
Monroe	LOSP 54-1	Lake Ontario State Parkway, Sect. D; Access to Long Pond Road Interchange and Dewey Ave. Interchange	2.03	Asp. Conc. Opt.= 0.18 Mi. Grading = 2.43 Mi. Misc. Work = 0.32 Mi. 3 Cl. Box Brs. 30.3', 30.3' and 25.2'	$60,000 Plans $25	1,033,000
Wyoming	FARC 54-80	Wales Center-Varysburg, Pt. 2, S. H. 8092 Proj. F-28(3) Cont. #2	0.85	Asp. Conc. Opt.	$12,000 Plans $10	220,000
DISTRICT No. 5, C. R. Waters, District Engineer State Office Building, Buffalo, N. Y.						
Cattaraugus	FAC 54-7	City of Olean: South Union St. Proj. U-141(5)	(0.30) (Hwy.) (0.09) (Acc.)	Asp. Conc. Ty. 2A = 0.18 Mi. Asp. Conc. Ty. 2B = 0.10 Mi. Asp. Conc. Ty. 2A (Acc.) = 0.09 Mi. Misc. Work = 0.02 Mi. Hy. Comp. I-Beam Br. 530'	$41,000 Plans $25	750,000
Cattaraugus and Erie	R.C. 54-79	Br. No. 1, S. H. 8018A & Br. No. 2, S. H. 1665	....	Cleaning & Painting Bridges	$1,400 Plans $10	25,000
DISTRICT No. 6, James H. Thomas, District Engineer, State Office Building, Hornell, N. Y.						
Steuben	FATC 54-2	Corning City: Erie Ave.-Denison Pkwy. FAC 53-19 Corning City: Denison Pkwy. Ext. FAC 49-4 Proj. U-225(8) Cont. #2	....	Traffic Signal System	$800 Plans $10	15,000
DISTRICT No. 8, J. S. Bixby, District Engineer, Pleasant Valley Road, Poughkeepsie, N. Y.						
Ulster	FARC 54-82	Saugerties-Palenville, Pts. 1A & 1B S. H. 1668-8176 Proj. F-280(2)	2.99	Asp. Conc. Opt. Conc. Twin Box Br. 24.2'	$42,000 Plans $15	750,000
DISTRICT No. 9, F. W. Donovan, District Engineer, 71 Frederick Street, Binghamton, N. Y.						
Delaware	FARC 54-84	Bovina Center-South, S. H. 951 Proj. S-414(1)	0.45	Bit. Mac. Ty. 1, Pen. Method = 0.43 Mi. Misc. Work = 0.02 Mi. Comp. I-Beam Br. 78.5' Twin Box Br. 30'	$14,000 Plans $15	249,000

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Instructions to Bidders."

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

B. D. TALLAMY
SUPT. OF PUBLIC WORKS

Bids: July 16, 1954

Contracts No. 221, No. 221A and No. 221B Paving

MAINE TURNPIKE AUTHORITY

MAINE TURNPIKE
Section 2—Portland to Augusta

(Augusta Extension)

Sealed Proposals will be received by the Maine Turnpike Authority for: Contracts No. 221, No. 221A and No. 221B, Paving at the offices of the Authority, 17 Bishop Street, Portland, Maine until 10:00 A.M. Eastern Standard Time on July 16, 1954 at which time and place the Proposals will be publicly opened and read.

The work will be performed either (a) under a single Contract No. 221 or (b) under two separate Contracts, No. 221A and 221B. Contract No. 221A will extend from Spring Street in the Town of Scarboro near Mile 43 to north of High Street in the Town of Falmouth near Mile 51, including the South Portland Connection, Falmouth Spur and Route 100 Connection. Contract No. 221B will extend from north of High Street in the Town of Falmouth, near Mile 51 to the Androscoggin River in the City of Auburn near Mile 76.

The principal items of work for Contracts No. 221A, 221B and 221 include:

	Contract No. 221A	Contract No. 221B	Contract No. 221
Borrow, Cubic Yards	23,690	37,950	61,640
Stripping Pits, Cubic Yards	2,500	3,500	6,000
Overhaul, Cubic Yard-Miles	25,000	35,000	60,000
Reshaping and Compacting Gravel Base Course-Square Yards	744,070	1,179,550	1,923,620
Aggregate for Bituminous Macadam Base Course, Tons	84,742	126,178	210,920
Asphalt Cement, Gallons	880,558	1,305,858	2,186,416
Bituminous Concrete Mixture, Tons	86,949	125,325	212,274
Aggregate for Bituminous Macadam Shoulders, Tons	27,182	49,201	76,383
Emulsified Asphalt, Gallons	466,550	844,500	1,311,050
Curbs, Walks and Dividers, Linear Feet	10,592	4,563	15,155
Steel Beam Guard Rail, Linear Feet	52,835	88,702	141,537
Wire Cable Guard Rail, Linear Feet	17,561	31,740	49,301
Topsoil and Seeding, Square Yards	977,207	1,530,306	2,507,513
Sodding, Square Yards	39,129	74,289	113,418
Preparation of Gravel Surface Course, Square Yards	26,473	59,354	85,827
Tar for Surface Treatment, Gallons	20,362	34,204	54,566
Cover Material for Surface Treatment, Tons	625	1,052	1,677

Plans and contract documents may be examined by prospective bidders during regular office hours at the offices of the Authority and at the offices of the Consulting Engineers, Howard, Needles, Tammen & Bergendoff, 55 Liberty Street, New York 5, N. Y. The plans and contract documents may be obtained from the Authority, 17 Bishop Street, Portland, Maine, upon payment of Thirty-Five Dollars ($35.00) for each set which will not be refunded. Checks shall be made payable to Howard. Needles, Tammen & Bergendoff.

Proposals must be accompanied by a certified or cashier's check payable to the Maine Turnpike Authority in an amount not less thn five per cent (5%) of the Total Amount in the Proposal but not less than $500.00 nor more than $200,000.00.

If a bidder submits a Proposal for Contract No. 221, as well as a Proposal for Contract No. 221A and/or Contract No. 221B, one check based on the Total Amount in the Proposal for Contract No. 221 will be sufficient.

Proposals must be made upon the Proposal forms furnished separately by the Authority with the contract documents and must be enclosed in the sealed special addressed envelopes provided therefor bearing the name and address of the bidder and the number of the Contract on the outside.

Before the award of the Contract, any bidder may be required to show that he has the necessary facilities, experience, ability and financial resources to perform the work within the time required and to the satisfaction of the Authority.

The Bidder, to whom a Contract is awarded, will be required to furnish a Surety Corporation Bond, satisfactory to the Authority, on the standard Contract Bond form of the Authority, for a sum not less than the Total Amount of the Proposal.

The Authority reserves the unqualified right to reject all Proposals or to accept that Proposal which in its sole judgment will under all circumstances serve its best interests. The Contract will be awarded or Proposals rejected within thirty days after the date of opening Proposals, except that in the event of default by a successful bidder the Authority reserves the right to accept the Proposal of any other bidder within twenty days after such default.

MAINE TURNPIKE AUTHORITY
Paul C. Thurston, Chairman

Portland, Maine
June 22, 1954

OFFICIAL PROPOSALS

(Continued from opposite page)

Bids: July 29, 1954

Sewerage Treatment Improvements

SEALED PROPOSALS will be received at the office of the DIRECTOR OF PUBLIC SERVICE, MUNICIPAL BUILDING, AKRON, OHIO, until 12:00 o'clock noon (Eastern Standard Time), or 1:00 o'clock (Daylight Saving Time), of the 29th day of July 1954, for Sewage Treatment Improvements comprising Grit Chambers, Meters, Comminutor and Service Building, Primary Settling Tanks, Sludge Pump Building, and Connecting Conduits and Piping, at the Akron Sewage Treatment Plant, Botzum, Ohio, for contracts classified as follows:

General Construction Contract 18A
Electrical Work Contract 18B
Heating, Ventilating and Plumbing Contract 18C

As alternate to the above, proposals will also be taken at the same time and place for Sewage Treatment Improvements of reduced scope and comprising only Primary Settling Tanks, Sludge Pump Building, Effluent Conduit and included general construction, electrical work, heating, plumbing and ventilating, identified as Alternate Contracts classified as follows:

General Construction Alternate Contract 18A
Electrical Work Alternate Contract 18B
Heating, Ventilating and Plumbing Alternate Contract 18C

Bidders must enter a complete proposal for both the complete and reduced projects and the Director of Public Service reserves the right to award contracts in any combination which he deems most advantageous and to the best interest of the City.

Copies of the contract drawings, specifications and forms of proposal are on file and may be seen at the office of the Department of Public Service, Division of Sewerage, 501 Municipal Building, Akron, Ohio, or at the office of Havens and Emerson, Consulting Engineers, 640 Leader Building, Cleveland, Ohio.

Full sets of the drawings, specifications and proposal forms may be obtained from the Department of Public Service, Division of Sewerage, Room 501 Municipal Building, Akron, Ohio, by making a deposit, in advance, of One Hundred Dollars ($100.00), checks payable to the City of Akron, Ohio. This deposit will be refunded in full to all those who submit a formal proposal to the Director of Public Service. All others who take out plans and specifications will be refunded the deposit in full provided all documents are returned prepaid to the City in good condition within Fifteen (15) calendar days after the date for receiving proposals. Copies of the specifications may be obtained by making a deposit, in advance, of Fifteen Dollars ($15.00) which will be refunded upon return of the specifications in good condition within Fifteen (15) days of the date for receiving proposals. Individual sheets of the contract drawings may be purchased at Two Dollars ($2.00) per sheet C.O.D., but are not returnable nor will the purchase price be refunded. Addenda, when issued, will be mailed only to those of record as having taken out plans and specifications.

Each proposal must contain the full name or names of the party or parties making the same and of all persons interested therein. Each proposal must be accompanied by a consent of surety from an approved surety company and by a certified or cashier's check on a solvent bank, and made payable to the City of Akron in an amount equal to not less than five (5) per cent of the total amount of the bid for Contract 18. The bid check will be a guarantee that if the proposal be accepted, a contract will be entered into and its performance secured by the required bond; and in default thereof, said check and the amount represented thereby will be forfeited to the City as liquidated damages.

Proposals must be accompanied by the affidavit as to interested parties, and, in the case of corporations not chartered in Ohio, by proper certificate that such corporation is authorized to do business in Ohio.

Bidders must use the printed forms, as none other will be accepted.

The Director of Public Service reserves the right to reject any or all bids, and to waive any informalities in the bids received and to accept any bid which is deemed most favorable to the City of Akron.

THE DIRECTOR OF PUBLIC SERVICE
Leo G. Walter

Ordinance No. 324-1954 June 2, 1954
Advertised July 1 & 8, 1954

EMPLOYMENT

WANTED

Designing engineers, highways-thruways, bridges, airfields, drainage, sanitation, hydraulic, soil mechanics, structural.

Draftsmen, designers, to Project Manager.

Submit resume

SEELYE STEVENSON VALUE & KNECHT
101 Park Ave. New York 17, N. Y.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

WANTED—ESTIMATOR for Plumbing, Heating, Air Conditioning & Process Piping. Must be able to do accurate take offs and have full knowledge of piping industry. Minimum of 5 years experience required. Location Central New York. Give full particulars with first reply. State education, experience, salary desired and date available. P-3115, Engineering News-Record.

MATERIALS ENGINEERS and Inspectors experienced in concrete, bituminous paving and soils. Vacancies in several grades. Write complete details to Toledo Testing Laboratory, Toledo, Ohio.

WANTED: Instructor of Engineering Drawing and descriptive geometry. Salary up to $4,700 for 9 month period and assistant professorship for qualified person. M. E. graduate preferred. Dept of Engr. Drawing, University of North Dakota, Grand Forks, North Dakota.

MALE HELP Wanted: Experienced Structural Draftsman. Personnel—Box 1087, Charlotte 1, N. C.

OHIO ENGINEERING firm needs engineers experienced in highway and bridge design for permanent work on urban expressway projects. Reply giving full experience record, personal history and salary desired. P-3065, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT — General Contracting firm in eastern West Virginia desires man with up-to-date experience in handling medium and large size building projects. The man we want must be cost conscious and have references to demonstrate that he has recently run jobs either in commercial or public building. Reply giving age, resume of experience and salary required. P-3155, Engineering News-Record.

MANAGER TO assume complete control of small excavating and sewer contracting company located in Ohio. Give age, references, experience and salary desired. P-3148, Engineering News-Record.

STRUCTURAL ENGINEER—graduate, 5 years experience in bridge and heavy, building design. Location—eastern Pennsylvania. Send record resume and salary expected to P-3132, Engineering News-Record.

WANTED ESTIMATOR and Engineer who is qualified and has had experience in doing various things around a General Contractor's office, including estimating, some detailing, and be able to generally assist in the construction business. Write, giving full particulars and salary expected. P-3197, Engineering News-Record.

CONSTRUCTION GENERAL Manager — Wanted an experienced Construction executive to assume full responsibility for management of a well established building business serving the oil, chemical, power, steel and related industry. This applicant must be qualified to direct sales, engineering and heavy construction work. Reply giving personal history, education, experience and salary range. Reply P-3220, Engineering News-Record.

SALES ENGINEER for position of manager of sales, steel plate fabrication, experience and progressive, 30 to 40 years. Well established company. Opportunity for aggressive man. Give complete particulars. Reip to: Tippett & Wood, Phillipsburg, New Jersey.

INSTRUCTOR, FULL time or graduate assistantship in engineering drawing, position available. If interested write to Prof. H. E. Grant, Washington University, St. Louis 5, Mo.

(Continued on the following page)

BRIDGE and HIGHWAY DESIGNERS and DRAFTSMAN

Excellent opportunity for men with experience on bridges and expressways. Give complete resume and salary required in first letter.

RICHARDSON and GORDON
1411 Walnut Street
Philadelphia 2, Pa.

GRAVEL QUARRY CONSULTANT

We are looking for a man that has a wide experience in the sand, gravel and quarry business. You can be any age—possibly you are thinking of retiring. You can be a factory representative or a producer. We want you to act as a consultant to our salesmen. We represent Iowa Manufacturing Co., Northwest Engineering, Ingersoll-Rand and many other lines complementary to the gravel and quarry business, for the greater portion of the state of Indiana. Our headquarters are Indianapolis.

SEASTROM & CO.
2351 Kentucky Ave. Indianapolis, Indiana

ENGINEER-EXECUTIVE

for position of Technical Supervisor of Materials testing laboratory.

Must have at least 15 years engineering experience in soils, concrete and asphalt paving. Education and experience should be comparable to that required for Chief or Assistant Chief Engineer of Tests of one of the larger State Highway Departments. Furnish complete information and photo, if available. Replies confidential.

P-3085, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

WANTED

ENGINEER with guts and vision to take charge of, design and actually build, prestressed concrete beams and slabs. Salary in line with proven ability. Complete resume first letter.

P-3107, Engineering News Record
520 N. Michigan Ave., Chicago 11, Ill.

ESTIMATORS WANTED

General Estimators needed immediately. Several years experience with a general contractor in field of industrial construction. Salary commensurate with experience. Adequate housing, schools. Liberal employee benefits. Send resume or apply personally to

THE RUST ENGINEERING COMPANY
P. O. Box 418 Oak Ridge, Tennessee

Wanted—Office Engineer

With at Least 5 Years Outside Field Experience, Age 30-40 Years for a Permanent Position in Contractor's Office in Central New York. Material Take-Off, Purchasing, and Scheduling for Heavy Construction Projects. Ability to Assist in Estimating Heavy Construction Work Desirable.

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AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches —to a page. E.N.R.

Send NEW ADVERTISEMENTS: To New York Office W. 42nd St., N. Y. 36 for July 22nd issue closing July 12th.

ENGINEERS
Foreign Service

Graduate Chemical, Mechanical, Electrical & Construction Engineers with minimum of 5 years' experience. For specialized assignments commensurate with qualifications in various phases of construction, estimating materials and cost control, planning and refinery process work. Write giving full particulars regarding personal history and work experience. Please include telephone number.

Recruiting Supervisor, Box 30

Arabian American Oil Company
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BRIDGE ENGINEERS AND SPECIFICATION WRITERS

Civil Graduates of accredited U. S. colleges. Must have not less than the following experience:
Detailers—2 years structural steel or reinforced concrete detailing.
Designers—5 years responsible work on structural steel and concrete including work on long span bridges.
Squad Leaders—3 years responsible charge of squad on structural steel detailing.
Specification Writers—With design and field experience for writing specifications for steel bridges, concrete structures, and highway construction.

Please mail complete resume together with salary required to:

Howard, Needles, Tammen & Bergendoff
55 Liberty Street New York 5, N. Y.

OPPORTUNITY
For an energetic engineer with sales personality

25 to 35 years of age, for sales work with company operating on nationwide basis furnishing Concrete Form Engineering and Rental Service. General construction experience and some Engineering college training essential. Give full details in first letter to

R. P. Wilkinson, Economy Forms Corp.
4301 N. E. 14th St., Des Moines 13, Iowa

SALES ENGINEERS and TRAINEES

Young men with civil or architectural engineering degrees.
Ours is a sheet metal building products industry of national repute offering an unusual opportunity to young men with knowledge of building construction. Excellent outlook for advancement in a growing company with a bright business future.

INLAND STEEL PRODUCTS COMPANY
4101 W. Burnham St. Milwaukee, Wisconsin

(Continued from preceding page)

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SALES ENGINEER — Rochester, New York and Pittsburgh, Pennsylvania territories open with established national concern selling prefabricated metal products to engineering and construction markets. Positions are permanent and offer excellent future with aggressive, progressive and expanding organization. Engineering degree desirable. Previous sales experience unnecessary. Ages 24 to 30. Car furnished. Complete training program. Salary and bonus. RW-2289, Engineering News-Record.

EMPLOYMENT SERVICES

OVERSEAS PROJECTS Guide to most active constructors-engineers, oil co's., gov't & UN groups hiring for foreign projects. Send $1. Cove-McKane Int., GPO Box 126E, NY 1, NY.

SALARIED PERSONNEL, $3,000-$25,000. This confidential service, established 1929, is geared to needs of high grade men who seek a change of connection under conditions assuring, if employed, full protection to present position. Send name and address only for details. Personal consultation invited. Jira Thayer Jennings, Dept. L, 241 Orange St., New Haven, Conn.

POSITIONS WANTED

CHIEF ENGINEER. Successfully completing major dam project. Seek incentive opportunity. Graduate. Registered Civil and Structural Engineer all Pacific States. Soils and Foundations expert. Twenty years experience design of major dam, hydro projects, bridges, varied industrial buildings, and facilities. Personable. Aggressive. PW-3123, Engineering News-Record.

SUPERINTENDENT EXTENSIVE experience on Rock. Open cut, shafts, tunnel, quarry, subway. Box PW-3120, Engineering News-Record.

ENGINEER WITH business administration course desires position with architects, contractors or financial firms. 20 years experience in construction, cost and estimates. Just returned after 3 years in Africa and Europe as cost engineer on large projects. Knowledge of several languages, single and free to travel. PW-3163, Engineering News-Record.

CIVIL—STRUCTURAL Engineer; thirty years diversified experience; planning, designs, specifications, supervision, office, field, steel, reinforced concrete, timber structures; power plants, oil refineries, airbases, site development, port facilitties, hospitals, theatres, commercial sky scrapers. Includes six years overseas Europe, South America, Pacific. Foreign assignment preferred; available June 30. PW-3135, Engineering News-Record.

CONSTRUCTION ENGINEER: — Registered Civil Engineer, 15 years' experience heavy construction. Now completing projects in West Indies, previous experience Middle East, Latin America. Desires permanent connection. Some Spanish, Arabic, French. Married status. PW-3144, Engineering News-Record.

ENGINEER, REG. P.E., Age 31 experience in mechanical and civil engineering, desire position with municipality or county in N. Y., Penna., Ohio. PW-3171, Engineering News-Record.

ELECTRICAL ENGINEER—Age 31—Experienced in heavy construction desires field position, resume available. PW-3173, Engineering News-Record.

CIVIL ENGINEER, available July 1. Recent graduate with 18 months structural design experience. Interested in design, construction or sales. South, Southwest or Midwest preferred. PW-3185, Engineering News-Record.

(Continued on the opposite page)

ESTIMATOR WANTED
HEAVY CONSTRUCTION

Must be completely familiar with analyzation and pricing of all types heavy construction. Location — Southern Indiana. We are a good company and can offer an attractive arrangement to a qualified person.

P-3002, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

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P-3204 Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

CONSTRUCTION ENGINEER

Man under thirty years of age, preferably with at least one year's experience, for general construction work. Excellent opportunity for rapid advancement. State age, experience, availability and full particulars in first letter.

P-3183, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

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Complete Building Estimators Course, also Building Labor Calculator for practicing estimators. Thirty-fourth year serving the building industry. For free trial and all particulars write:

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WILSON *Engineering Corp.*
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POSITIONS WANTED

(Continued from the opposite page)

KOREAN RECONSTRUCTION Program-Office Engineer, estimator, 5 yrs. exp. plus 2 yrs. in Asia wishes to assist in Korean Program. Graduate, Age 30. Resume on request. PW-3186, Engineering News-Record.

EXECUTIVE-SUPERINTENDENT 25 years experience in all phases of Industrial and General Construction. Buildings, Foundattion work, Tunnels, Dams, Chemical plants, Sewage plants, Filtration plants, and Municipal installations. Desire permanent connection with progressive company. Location immaterial. Salary open. All replies answered. Reply Box PW-3203, Engineering News-Record.

STRUCTURAL ENGINEER Master Degree. Experience: 2 years designing of prestressed and reinforced concrete, ¾ year designing and detailing of structural steel, 2 years with General contractor as superintendent and estimator. Desire job with General contractor or with advanced consulting structural engineer in northern state. Box PW-3219, Engineering News-Record.

CONSTRUCTION EXECUTIVE: Graduate Civil Engineer, Registered Prof. Engineer, 20 years experience in Design, Estimating, Purchasing & Supervision of General Building Construction. Desires new connection where permanency and management participation is assured. PW-3201, Engineering News-Record.

CONSTRUCTION ENGINEER—B.S.C.E. Reg. Alabama. 25 years experience. 7 years varied construction, 18 years hydroelectric and steam plants. South preferred. Available now. State salary. PW-3217, Engineering News-Record.

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2—1,200 barrel Johnson Cement Silos with bucket elevator, under track hopper and screw conveyor.

2—Johnson 150 cubic yard Concrete Plants, 3 aggregate and 1 cement compartment, 2 cubic yard aggregate and cement weight batchers, 520 barrel auxiliary cement bin with truck hopper, elevator and screw conveyor. One outfit has aggregate truck hopper and bucket elevator. Plants include 2 each of Ransome 28S Mixers.

50—1½ yard Blaw-Knox, R-46, Bottom Dump Concrete Buckets.

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Allis-Chalmers Model HD-15-GC Torque Converter Tracto-Shovel. 3 yard capacity. Almost new.

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Shovel Front for 38-B Bucyrus Erie
Advise age, condition, price
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Buda Diesel Engine
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Koehring (605), 1½ Cu. Yd.

36-Ton, clamshell, dragline, hoe. D-13600 A. Cat. diesel, 75 ft. boom, power, lowering-suspension-stop. Retractable A frame, long and wide mountings. Excellent condition, new 1952.

Insley, W.B., 1 Yd.

20-Ton crane, clam, dragline, complete 50 ft. boom, Cummins Diesel Model HIp 600, A-frame, power boomstop, long-wide mountings, new '53.

Compressors, 210-185-125

On rubber; gas, exc. condition.

Wanted, Wrecking Ball

3,000 lbs.

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W-3198, Engineering News-Record
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160 CFM IR—Worthington—Portable
165 CFM Smith 1106R Semi-Portable—25 HP
167 CFM 10 x 6 Ingersoll Vacuum Pump—7½ HP
170 CFM Davey Semi-Portable,—25 HP
196 CFM 8-9 x 9 Chicago T-B Steam
210 CFM Worthington (GAS or Diesel) Portable
211 CFM 9 x 9 Chicago T-B, 30-40 HP—Elec.
211 CFM 9 x 9 Ingersoll ES, 30-40 HP—Elec.
270 CFM 10 x 11 American 50 HP—Elec.
284 CFM Worthington Semi-Portable, 50 HP
315 CFM Worthington (GAS or Diesel) Portable
368 CFM Worthington Semi-Portable, 75 HP
460 CFM 13/9 x 10 Chicago O-CB Duplex, 75 HP Elec.
500 CFM Worthington (DIESEL) Portable
652 CFM 13/9 x 10 Chicago 0-CB Duplex, 100 HP Elec.
600 CFM Worthington (DIESEL) Portable

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720 CFM 18 x 7 Worthington HBV Vacuum Pump 25 HP
1184 CFM 22 x 9 Chicago T-VB Vacuum Pump 40 HP
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Quality Rebuilts by American
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OSGOOD ½ Yd. Shovel with G.M. Diesel.

POWER GRADER, AMERICAN, with 10 ft. Moldboard, Scarifier, Cab.

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All machine cleaned, commercially straight, 20' single random lengths, ends beveled, used good condition. Also suitable for structural purposes and medium pressure pipeline service. Priced low, prompt shipment, Welda, Kansas, Grandview and Carrollton, Mo.

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C.I. Water Pipe and Fittings-AWWA-Std.

We specialize in Hard to Get—C.I. Pipe and Fittings—such as the following

5L—60" B&S Pipe 12' L. Class B.
2,000 Ft.—30" Pipe—Class B. 12' L.
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3—60", 24—18", 12—20", 12—24".
Solid Sleeves, all 24" Long Class D.
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Flanged F & D. 125 lbs, also "Y" Branches 3" to 30" B&S Type 2
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Also C.I. B&S Pipe 3" to 36"—C.I. Flange Pipe 3" to 24" Dia. Complete line of C.I. Fittings always in stock. B&S and Flanged

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All steel twin screw tug boats. 38'x13'x6'. Powered by two 142 HP Chrysler engines. 9 to 1 reduction gear.

New, still in the original crates. $12,500 each.

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PIPE

15,000 feet 6" steel pipe
10,000 feet 4" steel pipe

Both equipped with roller grip couplings suitable for air or water.

Subject to prior sale

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use this section, as many contractors do, as a pipe buying directory. It can save you time when you want to know, quickly, where to buy good new or used pipe.

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Miscellaneous Tunnel Plant & Equipment

MUCKING MACHINES: Conway—(4) Model 75; (4) Model 100.

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CARPULLERS & TUGGER HOISTS.

STEEL BUILDINGS (Armco Drainage & Metal Co.

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BLOWERS: Joy—Coppus-Vano—Roots-Connersville.

BATCH PLANTS: (Complete with Koehring Mixers & 3,000 Bbl. Silos)—(2) Blaw-Knox (1) Johnson.

AIR COMPRESSORS: Portable & Stationary.

AGITATORS: Blaw-Knox, 144 C. F., 20 H.P., Elec.

GROUT PUMPS: Gardner-Denver—10x10x4.

GUNITE MACHINES: Cement Gun, N2.

TRANSFORMERS: Both dry & oil type. From 1½ KVA to 100 KVA.

OIL CIRCUIT BREAKERS: 200 to 600 Amp., 5000 V.

RECTIFIERS: G. E. 150 KW, 275 V., D. C., 2300 V., A. C., 3 Ph., 60 C.

RAIL: 56# & 60#.

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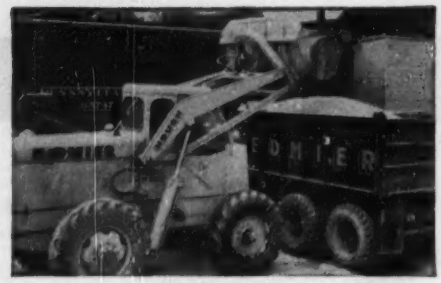
IN MINUTES!

Quick Replacement of Fuel, Lube, Air and Hydraulic Lines Keeps Equipment on the Job!

The difference between minimum downtime and wasted hours often depends upon the speed with which a damaged fuel, lube, air, or hydraulic line can be replaced. If you operate mobile equipment, Aeroquip bulk hose and detachable, reusable fittings will provide a compact, portable inventory that meets all your hose line replacement needs.

You can make assemblies on the spot by cutting bulk hose to required length and attaching the reusable fittings. This "Aeroquip Idea" gets equipment back on the job *fast*. For information, see your Aeroquip distributor or write us.



Edmier, Inc., one of Chicago's leading firms dealing in excavating, grading and construction materials hauling, operates more than 100 trucks and a large number of construction machines. To help reduce downtime, a supply of Aeroquip bulk hose and reusable fittings is on hand at all times.

Hose line replacements are made as they are needed. Here, Orville J. Wiley, Edmier Maintenance Foreman, reuses an Aeroquip fitting to make a new assembly for a Hough Payloader. Aeroquip hose line replacements are used for hydraulic systems on trucks and construction equipment, air systems on drag lines and cranes, and for greasing equipment in maintenance shops.

It takes only a few minutes to get the Payloader back on the job. Says Mr. Wiley: "There isn't any doubt that Aeroquip hose can withstand more abuse and flexing than any other hose we've ever used. Safety wise, it's the best. Not only has Aeroquip cut our maintenance replacement cost in half, it has also contributed a great savings in downtime and hydraulic oil loss."

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AEROQUIP PRODUCTS ARE FULLY PROTECTED BY PATENTS IN U.S.A. AND ABROAD

Basic dimensions

Overall Length	21′ 0″
Overall Width (over fixed outriggers)	11′ ¾″
Ground to top of chassis frame	52″
Wheelbase	152″
Chassis frame width	49″
Chassis frame depth	18″
Ground to outrigger	21″
Turning radius (center of carrier)	30′ 0″
Weights:	
Chassis . . . . Front	10,100 lbs.
Rear	14,900 lbs.
Total	**25,000 lbs.**

New Carrier mounts 20-to 25-ton rigs

A new crane carrier, designated the Cook CW-312, has been designed for all makes of cranes in the 20 to 25-ton class, either as new and original equipment or for used crawler or truck types.

The big feature of the new unit is that it has an independent power supply to permit independent swing and travel. The power plant is a Model 223, 6-cyl, Ford Industrial and is assembled on a sub-frame. The power train consists of a torque converter and a three-speed and reverse planetary transmission; two-speed auxiliary transmission provides two operational speed ranges. Each component is said to be easily accessible for service and maintenance, and when desired. For service, repair or replacement, each can be removed from the sub-frame individually or as a complete power train.

Operation of the CW-312 is from the operator's position in the crane cab and features hydraulic steering and air brakes, yet there are no hydraulic lines running between carrier and crane—the controls are operated by a mechanical linkage through the center pin.

Since the carrier has its own power plant, there is no transmission of power between carrier and crane. Crane travel gear, clutches, etc. are completely eliminated as is the necessity for having the crane mechanism in operation to propel the carrier. This latter feature results not only in savings in crane mechanism but also on maintenance costs.

Further, the independent power supply allows job-site assembling. Ac-

(*Continued on page 146*)

COOK CRANE CARRIER will mount American model 375 crane and equivalents.

Brief specifications

Engine: Model 223; 6 cyl., overhead valve, Ford industrial engine
- Bore . . . . . 3.62″
- Stroke . . . . . 3.60″
- Displacement . . . . 223 cu. in.
- Maximum H.P. . . 115 @ 3800 RPM
- Maximum Torque. 194# @ 1700 RPM
- Compression Ratio. 7.2:1

Main transmission
- Converter ratio 2.10 to 1.00 @ stall
- Planetary 3rd 1.00 to 1.00
- Planetary 2nd 1.48 to 1.00
- Planetary 1st 2.44 to 1.00
- Planetary reverse 2.00 to 1.00

(Transmission shifts are accomplished through remote control to crane cab.)

Auxiliary transmission: Fuller Model PD 45H, 2 speed, heavy-duty transmission provides 2 operational speed ranges.
- 2nd Range . . . . 1.12 to 1.00
- 1st Range . . . . 1.68 to 1.00

(Transmission shifts are controlled at side of carrier outside of crane cab.)

Rear bogie: Cook Center Chain Drive Differential—CB Double Reduction—9.02 ratio
- Full floating jackshaft assembly
- Sprockets and chain—1¾ pitch ratio, 17 to 54 teeth
- Total reduction—31.00 to 1.00
- Walking Beams—Tapered, solid section alloy steel forging
- Load carrying axles: Rectangular, solid-section alloy steel forging

Travel speeds:

1st Range	M.P.H. @ 1800 R.P.M.	M.P.H. @ 2800 R.P.M
3rd	2.5	6.0
2nd	1.8	3.9
1st	1.1	2.4
Reverse	1.3	3.1
2nd Range		
3rd	4.6	11.0
2nd	3.3	7.3
1st	2.0	4.5
Reverse	2.4	5.7

cording to the manufacturer, any mechanic can set the crane on the carrier and install the control lines. Similarly, the crane can be removed easily for overhaul or replacement.

Low air brake pressure, low oil pressure and high water temperature are indicated by an audio signal horn in the chassis. Oil pressure, water temperature, ammeter and fuel gages are installed in a hinged box mounted on the engine sub-frame.

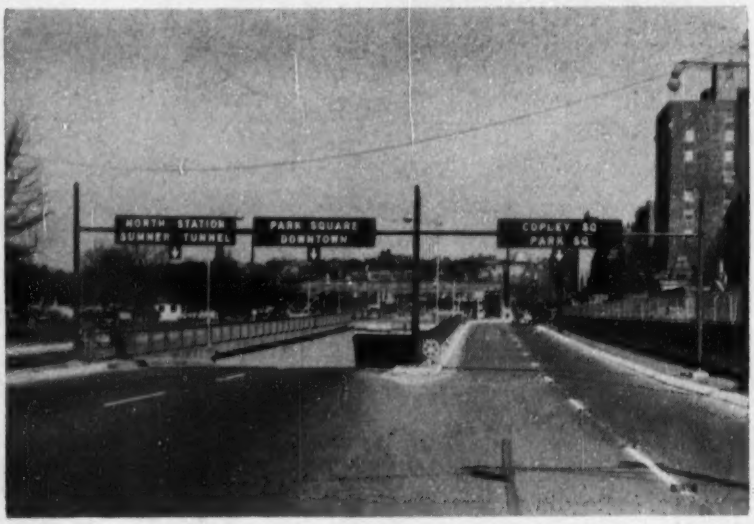
Rubber-mounted, the carrier is supported by twelve 11.00 x 24, 12-ply tires or twelve 14-ply Road Lug Logger Tread tires. The 14-ply's are optional at extra cost. The front axle is of the oscillating beam type to equalize front tire loading. Wedge blocks are provided for use where absolute rigidity is required in making lifts. Cook Bros. Equipment Co., 3334 San Fernando Rd., Los Angeles 65, Calif.

Muff-type ear protectors screen out injurious noise

Straightaway muff-type ear protectors are reported to give excellent protection against both high and low-frequency injurious noise and are said to be safe, sanitary and comfortable to wear. No special fitting is required and they are completely washable.

Three styles are available—a medium weight cotton helmet, a lightweight nylon mesh helmet and, for intermittent use, the headband type. The helmet types are designed for use with safety glasses and hard hats while the headband type permits the use of safety glasses.

The protectors are offered on a "trial on the job" basis and carry a full year free-repair guarantee against damage resulting from normal occupational use. Dept. B5, The David Clark Co., Inc., Worcester, Mass.



Steel sign supports are lightweights

An exclusive cold-rolling process is reported to impart 50 percent more yield strength to newly designed overhead sign supports. Called Monotubes, both the upright poles and beam segments are of one-piece construction, uniformly tapered, and made from heavy gage steel. Standard supports are designed on the basis of a maximum sign area of 100 sq ft and a weight of 500 lb applied at the center of the beam.

The cross beam is a flexible member, connected to the poles by pinned joints that cannot transmit bending moments. Beams are cambered to eliminate sag.

The sign support assemblies permit the sign to be mounted at any angle required and are suitable for either the reflective or illuminated type.

Span lengths from 31 to 101 ft are available. The Union Metal Mfg. Co., Canton 5, Ohio.

Two new pumps designed for muddy seepage control

A newly redesigned lightweight diaphragm pump is now available in two sizes for seepage control jobs. The smaller, Model 202A, is used with 2-in. hose and handles up to 3,000 gph; the 3-in. size, Model 302A, removes up to 3,300 gph. Both are designed for use in muddy or sandy ditch work.

They are self-priming, and, despite their small size, are said to operate on suction lifts up to 20 ft. They can be used with total liquid heads not exceeding 40 ft. of water.

As compared with previous models, one of the most obvious improvements is the substantial reduction in size. The new pump measures 45½ in. long, 29½ in. wide and 30½ in. high—2½ in. shorter and 6½ in. lower than the original models. The saving in size was accomplished by moving the chain drive from a vertical to horizontal position. This also resulted in lowering the pump shaft and therefore makes the assembly more rigid. It is pointed out that vibration has been reduced considerably and is now almost unnoticeable.

Power for both models is provided by a model 8-R6 Briggs & Stratton engine developing 2 hp for continuous duty. It is mounted on a sliding frame that can be solidly bolted to the welded steel chassis. Two 3.00 x 12 rubber tires aid in moving the equipment.

Diaphragm changing is said to be extremely simple. Four bolts on the outside periphery of the pump body

(Continued on page 150)

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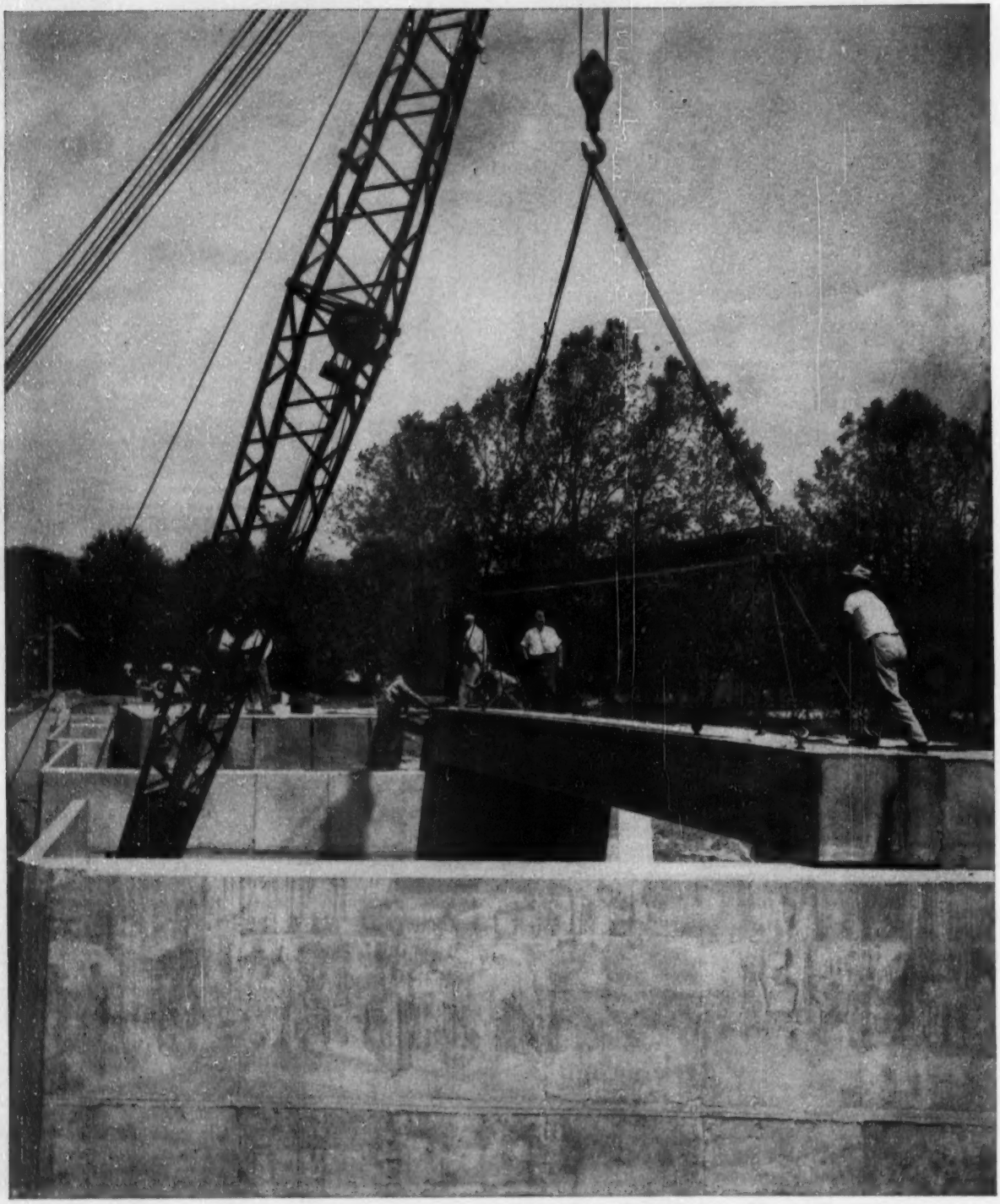

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American Strand

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are loosened and then by lifting on the pump handle the unit is opened completely exposing the diaphragm and the inside of the pump.

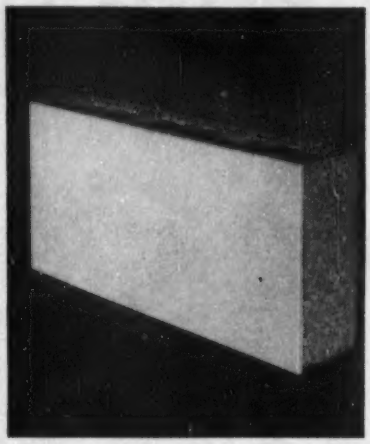
The suction and discharge assemblies are identical so that it is possible to reverse the direction of flow merely by reversing the two valves and seats. MARLOW PUMPS, RIDGEWOOD, N. J.

Glazed blocks allow building and finishing simultaneously

A new type of glazed masonry unit is said to be the first lightweight unit of its type to be produced. Marketed under the name Spectra-Glaze, the blocks are available in two textures—Acoustical Type A that retains the rough surface of the natural block and Type B with a uniformly smooth surface.

The Acoustical glaze is a sprayed-on finish applied in such a way that the noise reduction coefficient of the base block is maintained. It is claimed that in the low frequencies, 128 to 256 cps, Type A Spectra-Glaze is two to three times more efficient than many specially designed and erected acoustical products.

The Type B or Tile Face is cast directly to the face of the block in



individual molds. The glazing compound is mixed with a large percentage of high grade silica sand filler in the glazing plant and the mixture is applied to the block in a semi-liquid state. The facing thus becomes an integral part of the unit and, it is said, cannot be removed without destroying the base itself.

Since the molds are die-stamped, the dimensions of the glazed faces are kept to close tolerances regardless of any irregularities in the base block. The facing dimensions are 7⅞x15⅞ in. forming a ⅛-in. lip bonded to the perimeter of the block. A ¼-in. mortar joint is thus exposed while using regular 8-in. coursing with the usual ⅜-in. head and bed joint behind the facing.

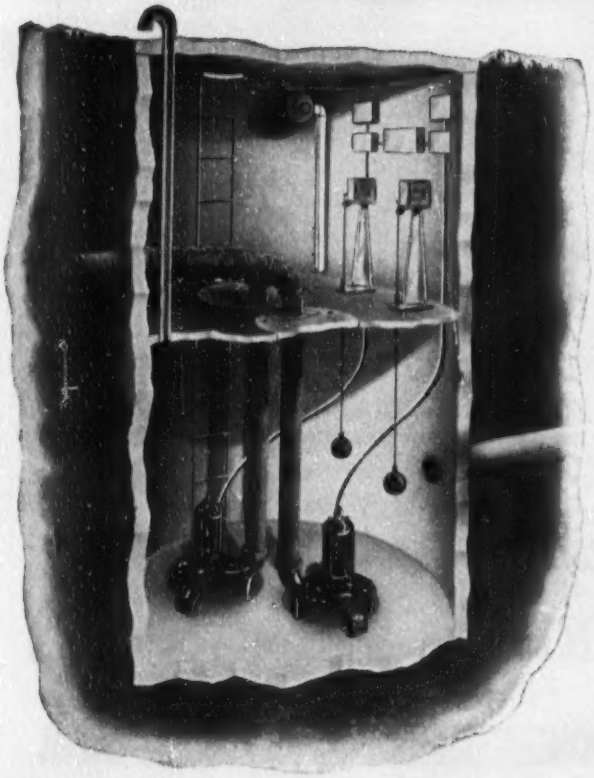
According to the company, the units are light in weight and fast laying, and because of the large face sizes, a minimum of joint area is exposed. Further, the glaze is said to be permanent and thereby eliminates periodic repainting. This is particularly important within the acoustical unit since efficiency would be reduced by paint layers. The Tile Face units have a satin finish gloss to prevent glare and reflection.

The in-the-wall cost of Acoustical Spectra-Glaze is reported to be approximately the cost of a painted block plus one additional coat of paint. Similarly, the in-the-wall cost of Tile Face Spectra-Glaze is said to be approximately 25 percent less than the cost of usual structural glazed masonry units.

The units are available in most standard structural shapes and in ten colors—other colors are available on special order. Test results have shown the glaze to be resistant to dulling

(*Continued on page 152*)

The SUBMERSIBLE SEWAGE EJECTOR



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Capacities 35 to 300 GPM with heads to 45 feet.
Discharge: 3" and 4"; ½ H.P. to 3 H.P. Motors.

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Small parts cleaner attaches to any air hose

A new small parts cleaner can be connected to any air hose to provide mechanical air agitation of solvents. Eight air jets in the 6½-gal unit activate the enclosed solvent to eliminate tedious hand scrubbing of dirty parts.

To operate, the drain basket is lifted and filled with the parts to be cleaned. The basket is then replaced along with the lid and the air control is set for the desired turbulence. The controlled turbulence is said to precipitate scale and sediment to the sump in the bottom of the tank. About 15 min are required for cleaning operations.

The Jet-Action parts cleaner is delivered with 5 gal of solvent material called Jetisoil. According to the manufacturer, the solvent has been especially compounded to stand up under air action with evaporation minimized. Turco Products, Inc., 6135 S. Central Ave., Los Angeles 1, Calif.

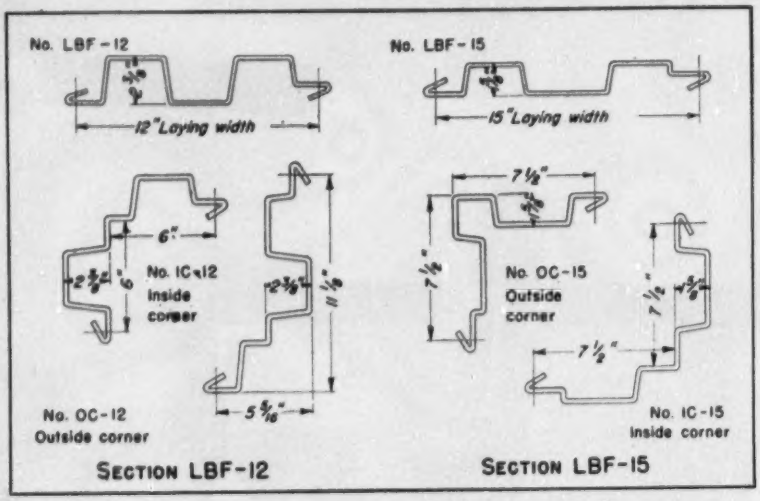
Insulation adhesive has fire-resistant properties

A self-extinguishing, fire-resistant laminating adhesive is now being produced for adhering glass fiber insulation pads and blankets to sheet metal, aluminum foil, fabrics, wallboard, fiberboard, etc.

Called Insulam, the adhesive is a latex base resin emulsion reported to set very rapidly when applied to porous surfaces and medium to fast on non-porous materials. Initial tackiness is usually sufficient to hold materials without the necessity of clamping or weighting.

The light tan liquid is applied cold by roller coaters or other glue spreaders in a thin coat. When the final bonding is completed, the film is said to withstand temperatures of 375 F without delamination and will not support combustion even at higher temperatures.

A single gallon of the adhesive is priced at $6.80, but if purchased in quantity lots—4 or more 55-gal drums—the price drops to 28¢ per lb or about $2.65 per gal. f.o.b. New York or Chicago. Paisley Products, Inc., 630 W. 51st St., New York 19, N. Y.



High-strength box-type section featured in piling

A new lightweight interlocking steel sheet piling makes use of a high-strength box section. It is recommended for installations that have been handled in the past with wood sheeting and offers the economy of reusability. These installations include shore and pier protection, sewer trenches, building excavations, abutments, bulkheads, cut-off walls and cofferdams. It is not to be considered competitive with standard steel sheet piling.

The piling is manufactured in 8 and 10 ga steel and in 12 and 15-in. laying widths. Any length up to 36 ft is available.

The interlock is a new design that permits two sheets to be lapped together to form a watertight interlock. In other words, it is not necessary to slide one sheet into another for its entire length as in the case of standard steel sheet piling.

The box-type corrugation simplifies the use of bracers, walers and other types of reinforcement. Another advantage, according to the company, is that the lightweight piling can be placed without the use of a rig. It can be pounded into place by a maul or small air or steam hammer.

One of the more common uses predicted for the product is on smaller excavation jobs that do not justify a contractor's moving in a rig. It is pointed out that it can be handled easily by two men and pulled out easier than wood.

Corners are available for each of the sections and gages as is a specially designed driving head; the latter is obtained on a rental basis. Pulling tongs have also been designed.

Properties per lineal foot of wall:

Section	Gage	Thickness In.	Area In.²	Weight Lbs. Per Sq. Ft.	Moment of Inertia In.⁴	Section Modulus In.³	Radius of Gyration In.
LBF-1210	10	0.135	3.1	10.6	2.38	1.97	0.88
LBF-1510	10	0.135	2.5	8.6	0.96	1.14	0.62
LBF-1208	8	0.165	3.8	12.9	2.91	2.38	0.88
LBF-1508	8	0.165	3.1	10.5	1.18	1.36	0.62

L. B. Foster Co., P.O. Box 1647, Pittsburgh 30, Pa.

New Products briefs . . .

• **Pre-wired assembly**—A new pre-wired assembly unit for recessed incandescent lighting fixtures is now available from the Atlas Electric Products Co., 319 Ten Eyck St., Brooklyn, N. Y. The assembly is installed with four nails. Framing and boxing out are eliminated. The Atlite pre-wired assembly is U. L. approved and is available in 60, 100, 150, 200-300-watt sizes for any of the manufacturer's incandescent boxes.

• **Points and adapters**—Points and adapters said to have quick change features and tough-wearing qualities have been developed by Electric Steel Foundry Co., Portland 10, Ore., as a recent addition to the standard line of ESCO box points and adapters. A self-sharpening point which has been made bigger to afford longer point life under difficult conditions, the R7R offers a heavy-duty 45-lb point 7 in. wide, 12 in. long and 1½ in. thick through the point section. The R-7 series box point and adapters are seen as the solution to the tooth problem on larger machines in the 5-15-yd classification, and are said to be especially useful in replacing heavy Vanderhoef & Whisler bases on 5, 6, 7 and 8-yd dippers.

An eagle's eye view showing progress on the Congress Street Expressway Chicago Illinois

Allied has the special

SKILL AND FACILITIES

to fabricate and erect the structural steel for super highways, freeways, and bridges of all types

The Congress Street Expressway, Chicago, Ill. Illustrating one of eight sections with a total of twelve miles. Now under construction by Allied for the Cook County Illinois Highway Department.

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PUBLICATIONS

Vibrators – A 10-page booklet gives some facts and figures on the application of external vibration in the manufacture of cast concrete pipe. It is based on the experience of several pipe manufacturers and offers some general recommendations based on these experiences. THE VIBER CO., 726 S. FLOWER ST., BURBANK, CALIF.

Water sewage and waste treatment—"Chemicals Used in Water, Sewage and Waste Treatment" are tabulated and indexed in a new 16page Technical Bulletin—No. 10-K12. Information and data supplied on 50 chemicals includes: chemical formulas, principal uses, names, forms in which chemicals may be obtained, size of shipping container, appearance and properties, bulk density, commercial strength and solubility. A table of chemical uses shows where these 50 chemicals may be used in water, sewage and waste treatment. OMEGA MACHINE CO., 345 HARRIS AVE., PROVIDENCE 1, R. I.

Weed killer–A new 12-page brochure describes a weed killer that has been in commercial use for over two years. The booklet describes in colored photographs the results obtained in experimental lots. PUBLIC RELATIONS DEPT., E. I. DU PONT DE NEMOURS & CO., INC., WILMINGTON 98, DEL.

Corrosion resisting steel–66 pages are used to describe the properties and features of Mayari R steel and their advantages in the manufacture and wear and corrosion-resistant properties in industrial equipment and equipment for the construction industry; in bridges, pipe and penstocks, etc. Catalog 353. BETHLEHEM STEEL CO., BETHLEHEM, PA.

Lime stabilization–The story of lime stabilization—its diverse methods of application, potentialities, limitations, methods of evaluation, and salient facts of 26 different lime projects—are contained in a new 68-page booklet "Lime Stabilization of Roads". Cost data are also included. NATIONAL LIME ASSN., 925 15TH ST., N.W., WASHINGTON 5, D. C.

Wire rope use and abuse–A 40-page booklet describes the "do's and don'ts" in unreeling, storring, lubrication, installation and use of wire rope. A section is devoted to operating conditions and methods, and maintenance. E. H. EDWARDS CO., 200 BUSH ST., SAN FRANCISCO 4, CALIF.

HYDRAULICS FOR MOBILE EQUIPMENT

VOL. 2

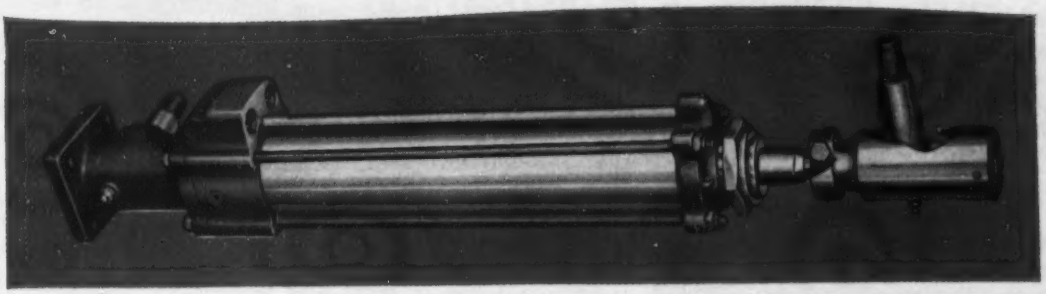
Mobile Equipment News

VICKERS INCORPORATED, DETROIT, MICHIGAN

IMPROVES PERFORMANCE • CUTS COSTS

NO. 8

New! VICKERS® HYDRAULIC POWER STEERING BOOSTER...SERIES S23



LATEST DEVELOPMENT in POWER STEERING for TRUCKS, BUSES, MATERIALS HANDLING VEHICLES, ROAD CONSTRUCTION and MINING MACHINERY

More compact . . . improved in operating characteristics . . . this new Vickers Steering Booster, Series S23 is an important new development in power steering for many vehicles. Application is much easier because it requires less space . . . and ultimate costs are substantially lower. Series S23 thus opens the way to fingertip ease of steering for a wide range of additional vehicles.

Like the preceding models, Series S23 has hydraulic lock against road shock. Bumps, chuckholes, blown front tires, obstructions, etc., cannot spin the steering wheel or jerk it out of control. This is a safety factor of great importance.

In the interest of better operation and as a logical design improvement, the integral relief valve has been omitted from Series S23 and combined with a volume control valve. Vickers VT16 and VT17 pumps have integral volume control and relief valves. Where larger pumps are required, a separate combination valve is used (see Series FM2 below).

ASK FOR NEW BULLETIN M5106

MORE VERSATILE INSTALLATION

In Series S23 Boosters, the servo ball stud housing is symmetrical, and can be assembled in any one of four positions. This and the compactness of the Booster makes application easier . . . increases the number of applications which can be made without major engineering changes. Series S23 Booster may be mounted interchangeably with Series S6-270 Booster, however a relief valve must be provided either by use of VT16 or VT17 pumps or Series FM2 volume control and overload relief valve.

REQUIRES LESS SPACE

The new booster has been reduced in size by the redesign of the servo control valve. The tube connecting the servo valve to the rod end has been relocated and is now on the same side as the fitting connection. As a result of these changes, Series S23 requires less space . . . works in closer quarters.

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Five sizes of Series FM2 Valves were developed primarily for hydraulic power steering on trucks, buses and materials handling equipment where the pump does not include a volume control valve. The FM2 improves steering booster performance by providing a relatively constant volume of oil regardless of engine speed variations. An integral relief valve is included.

ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921

EDITORIALS

State support for toll-road bonds

SOME MEASURE of the value of state backing for toll-highway bonds is found in the interest cost of $300 million in bonds sold by the New York State Thruway Authority on June 16. Those bonds are backed only by revenue from the thruway. Their interest cost to the authority is computed at 3.07. That compares with rates of 2.64 and 2.70 on two issues last year which were backed by the full faith and credit of New York State. Probably the spread would be wider in regions where bond houses had less assurance that actual traffic will exceed predictions, but even so the cost on $300 million is a considerable figure.

Despite the immediate savings, some conservative bond houses do not favor state support for toll-road bonds. They fear the effect that such wide use of state credit might have on the interest rates states will have to pay on bonds issued in future years.

Their reasoning appears sound, and in the days ahead it may serve as a check on the building of toll projects of dubious value for political considerations. If each project must stand or fall on the basis of the revenue it can produce, toll financing will not be carried beyond the point where it is needed to help the nation make up its current deficiencies in main highways.

To keep construction rolling

THE VITAL ROLE accorded construction in the U.S. economy affords ample reason for all levels of business and government to be concerned about the health and growth of the construction industry. It is, therefore, encouraging to note that the new tax bill now wending its way through Congress contains a more liberal depreciation formula for construction equipment.

In the past most aids to construction have been concerned with providing the financing of the capital improvements themselves—as through easier mortgage terms, the development of the revenue type bond and the like. Now, for almost the first time, some attention is being focused on the equipment necessary to bring the capital improvements into being. For faster depreciation should encourage investment in new and better equipment without which the construction industry would be much less able to handle the tasks that an expanding U.S. economy demands of it.

The degree to which American construction is dependent upon machines is often recognized but too seldom completely appreciated, particularly in the light of the huge investment that contractors must make to operate under today's conditions. In the days of animal-drawn equipment, hand tools and simple steam engine derricks, a contractor's investment was small indeed compared with the cost of the facility that he was building. It has steadily climbed until today the value of the equipment on a job frequently exceeds the contract price. That indeed is the secret of American construction—use lots of equipment, get the job done fast and move to another, always keeping a close watch on older machines to replace them with new as soon as obsolescence and wear begin to take their toll. Liberal depreciation allowances against taxes should aid this operation by permitting equipment investments to be liquidated faster.

The next needed step in insuring adequate mechanization of construction is to develop better financing facilities for equipment purchases. It is not realistic to expect that the manufacturers or distributors can do much more than they are now doing. This leaves the finance companies and the commercial banks as the principal sources of credit, and neither has shown an overwhelming interest in construction equipment. Commercial banks, with a few notable exceptions, have been particularly slow in sensing the opportunity for increased business in financing construction equipment purchases. Perhaps contractors, manufacturers and distributors by being more insistent on loans from their commercial banks could educate more of these firms in the basic soundness of construction operations. In any event, means must be found to keep equipment moving from factory to job. Only in that way can construction be kept rolling at a pace commensurate with the country's needs. Faster depreciation is a useful first step. Better credit facilities are a necessary second.

Praise for municipal engineers

A FINE COMPLIMENT, which will bring encouragement to many engineers across the country, was expressed by Mayor Robert F. Wagner, Jr., of New York at the opening of the South Street Elevated Highway, the last link in the expressway system along the periphery of Manhattan Island. Such projects, said the mayor, like many other public improvements, "are not the property of any one public official. They emanate from one group of men—the engineers of the office of the Borough President of Manhattan."

"These men have a tradition of accomplishment which goes back 40 years," said the mayor. "It is their work, their technical skill, that we salute today. And under our new career and salary plan we hope to give them something more than words of recognition for their work."

Most of our cities have like groups of men with great technical skill and devotion who seldom get the credit they deserve because the better known public officials make the headlines at the ribbon-cutting ceremonies. Let us hope that Mayor Wagner set a new pattern when he singled out the engineers of his city for special praise, and pointed to the need for adequate compensation for their work.

Raymond SALUTES

THE PEOPLE WHO SALUTED ALFRED!

(Photo by Moulin Studios, San Francisco, Cal.)

THIS IS ALFRED THE MONSTER . . . one of the heaviest pile hammers ever built. It has a 17,500-lb. ram developing more than 58,000 ft.-lb. of energy and was used to drive 460 H-piles, averaging 130 feet in length, to support a 25-story office building for Equitable Life Assurance Society's new San Francisco office.

But the noise! No one could predict the reverberations Alfred would cause as the echo of its heavy hammer bounced off the surrounding buildings. For four months the people of downtown San Francisco lived with Alfred . . . at first with annoyance, later with amused tolerance.

Then, on the day the piledriving was completed, 10,000 happy mourners spontaneously gathered to celebrate the departure of Alfred. As this gigantic piledriver was carted away, traffic stopped, bands played, ticker tape flew, speeches were made and Alfred left San Francisco—in a blaze of notoriety.

For their long-suffering patience . . . and their wonderful sense of humor, Raymond salutes the people who saluted Alfred.

(Photo by San Francisco Chronicle)

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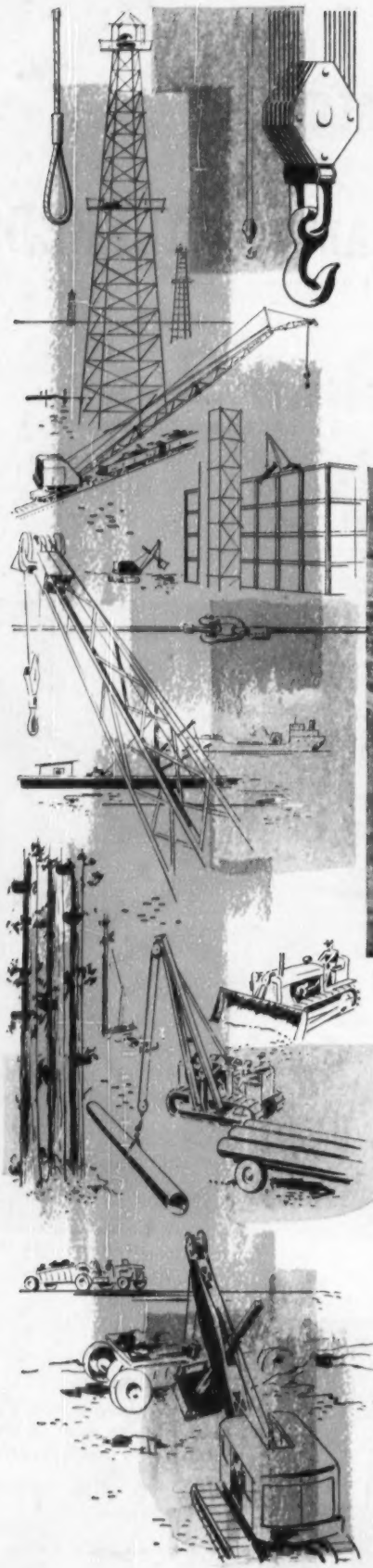

SPEEDI-SERVICE IS FOR ALL WIRE ROPE USERS!

Regardless of the amount of wire rope you use, you're eligible for the money-saving advantages of Speedi-Service. Whether you have a 2-ton hoist or a 100-unit earthmoving fleet, you can register your needs with your Broderick & Bascom distributor. Then, when replacement is needed, your rope will be ready in minutes instead of hours.

If you're not already saving time and money, call your Broderick & Bascom distributor and ask him to explain details of the Yellow Strand Speedi-Service!

THIS IS SPEEDI-SERVICE . . .

The wire rope requirements of your equipment are registered on permanent record cards by your Broderick & Bascom distributor. When a rope is needed, call your distributor and tell him what machine needs what line. He'll consult his records to determine what length, type, construction and grade of rope is needed. The correct rope will be taken from stocks controlled by your records and will be ready for you in a matter of minutes.

You eliminate costly record keeping, big stocks and downtime. You make money on the long run of precision-built Yellow Strand Wire Rope!

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